Canadian and American Overseas Oceanborne Trade Through Each Other's Ports

CANADIAN AND AMERICAN OVERSEAS OCEANBORNE TRADE THROUGH EACH OTHER'S PORTS

(Translation)

by

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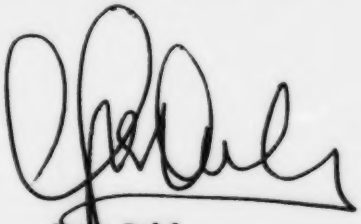
Foreword

In the days when ports served fairly well-defined hinterlands, shipping companies based their choice of port on the demand for seaborne transport generated by the economic activity of neighbouring regions.

In recent years, containerization and the development of intermodal transport have significantly changed the very notion of a port's hinterland with respect to the distribution of general cargo. To maximize the benefits of economies of scale, shipping companies have not only increased the size of their ships but have established increasingly sophisticated door-to-door transportation networks. These changes have brought about a reduction in the number of ports of call and a need to extend the ports' penetration of inland markets. Besides modifying the nature of hinterlands, the changes have increased national and international competition among ports on the same seaboard.

This study provides a detailed analysis of Canadian and American overseas seaborne trade that passes through the ports of the adjacent country, a routing phenomenon generally described as "diversion". It is believed to be the first detailed and complete study of its kind in the North American context. As well, the study seeks to identify the various factors likely to influence the routing of cargo and the interaction of the various parties involved, including shippers, carriers, ports, and governments.

This report is the Commission's second recent study on diversion. Following recent regulatory changes affecting transportation in the United States, the issue is now of particular importance. The opinions contained in this report are those of the author and do not necessarily reflect the views of the Canadian Transport Commission.



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The methodology and analyses contained in this report do not necessarily reflect the views of the Canadian Transport Commission, and the author accepts full responsibility for any errors or omissions which the report may contain.

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Chapter 1

INTRODUCTION

1.1 Framework

The routing of international overseas trade requires the successive use of various technologies and services which, taken as a whole, form a worldwide commodities transport system. One method of analysing this system consists in determining how cargo distribution is organized within the system. Such distribution can be defined as the entire range of routes and itineraries by which commodities are shipped. The complete overseas shipping process often involves five stages: (1) inland transport serving domestic ports; (2) ports; (3) ocean transport; (4) foreign ports; and (5) inland transport serving foreign ports.

Traditional analyses of international overseas transport generally concentrate on stages (2), (3) and (4) above. Such an approach deals exclusively with ocean transport networks and adopts the position that inland modes of transport to and from the port are beyond the scope of the analysis. However, it is becoming increasingly clear that inland transport should be an integral part of the analysis. More and more, a common element of current international transportation economics is the concept of integration of ocean and inland transport in a single chain to minimize the total cost of transport from point of origin to point of destination.

An analysis of cargo "diversion" between Canada and the United States falls within this broader framework. For convenience, the short term "diversion" is used throughout this report to describe the phenomenon of routing some of the overseas trade of one country through adjacent ports in a neighbouring country. The ambiguity of the term is discussed in Chapter 9. By considering the international transportation chain in overall terms, (i.e., by including inland routing systems), one discovers the existence of a variety of shipping routes for merchandise to be sent to the same destination. Diverted traffic represents a special category: merchandise is diverted to ports of countries that are neither the country of first origin of the commodities, nor their final destination.

A study of traffic diversion involves determining, both quantitatively and qualitatively, the flow of exports and imports shipped along such routes. From this information, we gain a better understanding of the international transport system serving Canada, including inland routings. On the one hand, the orientation of such traffic is the result of plans and decisions made by the suppliers and customers of international transport. The organization of transport networks between the points of

origin and destination reflects the state and development of the transport market, as well as the effects of this development on the links between inland and ocean transport. On the other hand, the orientation of the export or import flow has a significant impact, direct and indirect, positive and negative, on the activities of the parties involved as well as on the economies of the regions and countries in question. The intensity of the debate on diverted traffic issues reveals the magnitude of this impact. A more precise understanding of the diversion phenomenon can help clarify the major elements of this debate.

1.2 Objectives

This study seeks to examine traffic defined as diverted between Canada and the United States. Its objectives are:

(a) to determine the amount of Canadian overseas traffic routed via the United States and, conversely, American overseas traffic routed via Canada;

(b) to determine the various characteristics of diverted traffic: the overseas destinations and origins of commodities; the directional flow of traffic to the United States and Canada (East or West Coasts); crossover points in the United States and Canada (ports or customs districts);

(c) to determine the nature of the products shipped in this manner;

(d) to compare, quantitatively and qualitatively, Canadian traffic diverted via the United States with American traffic diverted via Canada, in order to assess the importance of diversion in terms of the foreign trade of both countries; and lastly,

(e) to determine the general trends in Canadian and American diverted traffic over a five-year period (1978-1982) in order to verify, over a longer period of time, the characteristics observed in 1982.

1.3 Scope

This report is the first published, detailed study of the diversion phenomenon between Canada and the United States to include a complete analysis of diverted traffic flows between the

two countries. The statistics used enabled us to measure the total flow of Canadian overseas trade commodities via the United States, as well as total American overseas trade routed via Canada, in terms of both exports and imports.

Particular attention has been given to an analysis of traffic diverted in 1982. All types of commodities are included and those constituting diverted traffic flows have been examined in terms of their monetary value. Throughout the analysis, emphasis has often been placed on the distinction between traffic flows diverted on the Atlantic seaboard and those on the Pacific seaboard. In addition, data from 1978 to 1982 have been used to trace the general development of the diversion phenomenon.

Finally, it should be mentioned that traffic diversion may occur at both ends of the ocean route. Cargo sent from or received by Canada via Canadian ports may have been subject to diversion overseas. This is particularly true for Europe. Commodities shipped to France, for example, may have been routed through the Netherlands, whereas on this side of the ocean, there may have been no diversion at all.[1] The present study, however, does not attempt to deal with the overseas aspect.

1.4 Data Base and Methods

Because of the inadequacy of Canadian statistics on diversion, those used for this study have been taken from American sources. Thus all dollar values, whether for Canadian or American traffic, are expressed in U.S. dollars.

Official statistics do not deal specifically with diverted traffic. Neither Canada nor the United States explicitly and systematically gathers data on such traffic. Thus, from existing data, it was necessary to compile a new data base that excluded irrelevant information. To accomplish this, two different approaches were required:

1. The diversion of Canadian trade via the United States was the simplest to determine. An initial series of statistics dealt with the loading and unloading in American ports of commodities not destined for or originating in the United States. By isolating commodities enroute to or coming from Canada, it was possible to identify Canadian traffic diverted through American ports.

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[1]Pierre Bauchet, "L'économie du transport international de marchandises - Air et Mer", Editions Economica, Paris, 1982 (particularly pp. 341-49).

2. Determining American trade via Canada was much more complicated. It called for isolation of pertinent information from the entirety of American import and export data, and the adoption of the hypothesis that American commodities exported or imported overseas, by modes of transport other than sea or air, constituted diverted traffic. By applying this methodology, the flow of American traffic via Canada could be deduced. Chapter 3 contains further clarification of the methodology used in this report.

Chapter 2

SUMMARY AND OBSERVATIONS

This chapter presents the major characteristics of Canadian trade routed via the United States and of American trade routed via Canada, as interpreted in this report.

2.1 Trends Observed From 1978 to 1982

(a) Two major points come to light from an examination of diverted traffic and the role it plays in the total overseas foreign trade of the two countries (Table 2.1). First, American traffic via Canada accounts for a small portion of the total value of U.S. overseas trade, and this has not changed since 1978 (less than 1.5% of American foreign trade). Second, Canadian traffic routed through the United States represents a much greater portion of Canadian overseas foreign trade and has increased considerably since 1978; Canadian exports via the United States grew from 6.5% of all Canadian overseas exports in 1978 to 8.3% in 1982. Canadian imports via the United States, which represented 15.7% of all imports in 1978, accounted for over onequarter (26.5%) of all imports in 1982.

(b) From 1978 to 1982, the value of Canadian traffic routed via the United States was higher than that of American traffic routed via Canada, except in 1978. In that particular year, the balance was slightly in Canada's favour. The comparative development of Canadian traffic via the United States and of American traffic via Canada shows that, during the period, the overall balance was unfavourable to Canada. This situation was very much due to the growing importance of Canadian imports via the United States. In the case of exports, the balance has consistently been in Canada's favour.

(c) As shown in Table 2.2, the state and development of traffic routed via the East and West Coasts are very different. In the East, the balance of traffic has been decidedly in Canada's favour since 1979, in terms of both exports and imports. In the West, the situation is just the contrary. The balance of traffic has been very unfavourable to Canada since 1979, especially in terms of imports. There has been a constant increase in Canadian overseas imports via the West Coast of the United States since 1979.

(d) In short, Canada's "deficit" in terms of the value of diverted traffic is essentially due to heavy Canadian imports via the West Coast ports of the United States. Since 1979, the pattern for diverted traffic has changed very little: in the East, American traffic via Canada is greater than Canadian traffic via the United States, in terms of both imports and

Table 2.1
EVALUATION OF DIVERSION RATES
1978-1982
(in percentages)

	1978	1979	1980	1981	1982
Exports					
- of Canadian trade	6.5	5.4	5.3	7.4	8.3
- of American trade	0.9	0.9	1.2	1.3	1.2
Imports					
- of Canadian trade	15.7	27.6	24.4	26.8	26.5
- of American trade	1.7	1.8	1.7	1.8	1.6
Total					
- Canadian	10.4	14.2	13.3	16.4	16.0
- American	1.3	1.3	1.4	1.5	1.4

Table 2.2
DIVERSION IN TERMS OF VALUE*
1978-1982
(in millions of U.S. dollars)

Value of Diverted Traffic	1978	1979	1980	1981	1982
CANADIAN VIA THE UNITED STATES					
Exports					
East Coast	710.1	772.5	920.5	1 264.0	1 177.4
West Coast	192.9	199.8	338.8	466.9	614.1
Total	903.0	972.3	1 259.3	1 731.0	1 791.5
Imports					
East Coast	212.1	367.7	426.2	424.5	413.5
West Coast	1 384.7	2 865.9	3 846.0	5 235.9	3 832.0
Total	1 596.8	3 233.6	4 272.2	5 660.4	4 245.5
AMERICAN VIA CANADA					
Exports					
East Coast	NA	1 159.0	1 874.9	2 220.7	1 759.7
West Coast	NA	152.6	224.2	207.5	209.8
Total	978.8	1 311.6	2 099.1	2 428.2	1 969.4
Import					
East Coast	NA	1 988.7	2 052.1	2 444.6	1 997.6
West Coast	NA	66.0	84.2	96.7	120.6
Total	1 696.2	2 054.7	2 136.3	2 541.3	2 118.2

*Due to rounding, the sum of the components may not correspond exactly to totals.
Note: NA = not available.
Source for Tables 2.1 and 2.2: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

exports. In the West, Canadian imports via the American Pacific seaports are far higher than American traffic via Canadian Pacific seaports. In the end, the gains accrued from eastern traffic do not compensate for the "loss" of western traffic: in 1982, the overall deficit, measured in value of traffic handled, was in the neighbourhood of $2 billion (U.S.).

2.2 Shipping Routes

2.2.1 Diverted Canadian Traffic

(a) Almost three-quarters (over $4.4 billion U.S.) of the value of Canadian traffic routed via the United States passed through West Coast American ports. Approximately, nine-tenths of this traffic consisted of Canadian imports. East Coast American ports handled Canadian overseas traffic worth $1.6 billion, accounting for over three-quarters of our exports. Thus, as shown in Figures 2.1 and 2.2, diversion via the Eastern United States principally affected exports whereas diversion through the Western United States principally affected imports.

(b) In the diversion context, the major port on the Eastern American seaboard was New York. This port handled almost two-thirds of the value of Canadian exports as well as slightly less than three-quarters of the value of Canadian imports routed via the Eastern United States.

(c) Also in this regard, the major port on the American West Coast was Seattle. This port handled almost four-fifths of the value of Canadian exports routed via the Western United States and more than three-quarters of the value of imports. Canadian exports and imports via the Western United States were concentrated in the North Pacific ports.

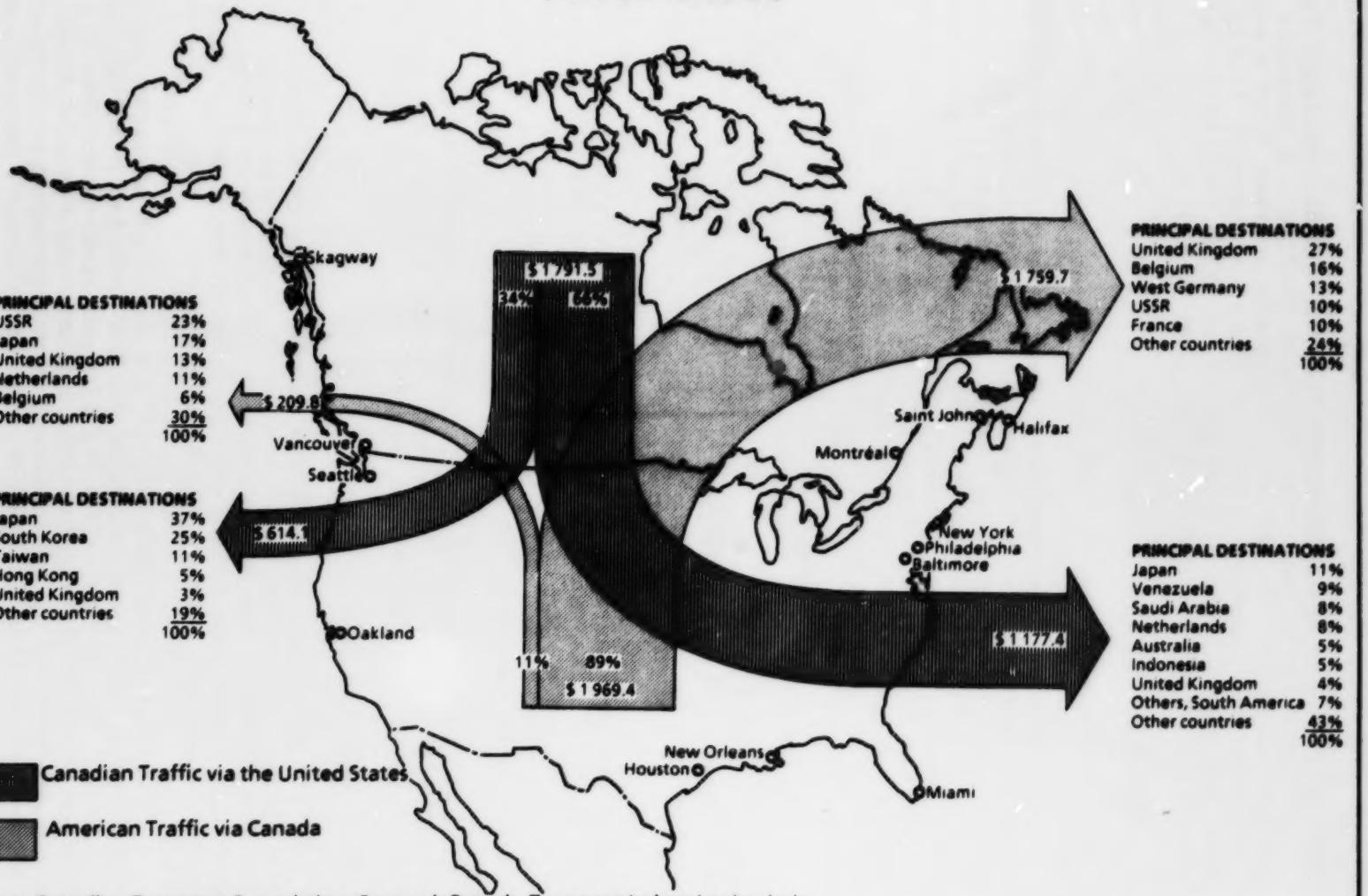
(d) In terms of tonnage, Canadian traffic via New York amounted to almost 370 000 metric tonnes and that via Seattle in the neighbourhood of 500 000 tonnes.

2.2.2 American Traffic

(a) More than nine-tenths of the value of American traffic via Canada, amounting to $3.8 billion (U.S.), was routed through Eastern Canada. The distribution of this traffic via the East Coast of Canada was relatively even, with exports amounting to $1.8 billion and imports almost $2 billion.

(b) Over three-quarters of the value of American exports via Eastern Canada were handled in the Detroit, Michigan customs district. In the West, the Seattle and Pembina customs districts handled practically all American exports via Western Canada. Almost two-thirds of the value of American imports via Eastern Canada were handled in the districts of Chicago, Detroit, New

Figure 2.1
ROUTING OF DIVERTED EXPORT TRAFFIC
1982
(Millions of U.S. Dollars)



PRINCIPAL DESTINATIONS

USSR	23%
Japan	17%
United Kingdom	13%
Netherlands	11%
Belgium	6%
Other countries	30%
	100%

PRINCIPAL DESTINATIONS

Japan	37%
South Korea	25%
Taiwan	11%
Hong Kong	5%
United Kingdom	3%
Other countries	19%
	100%

PRINCIPAL DESTINATIONS

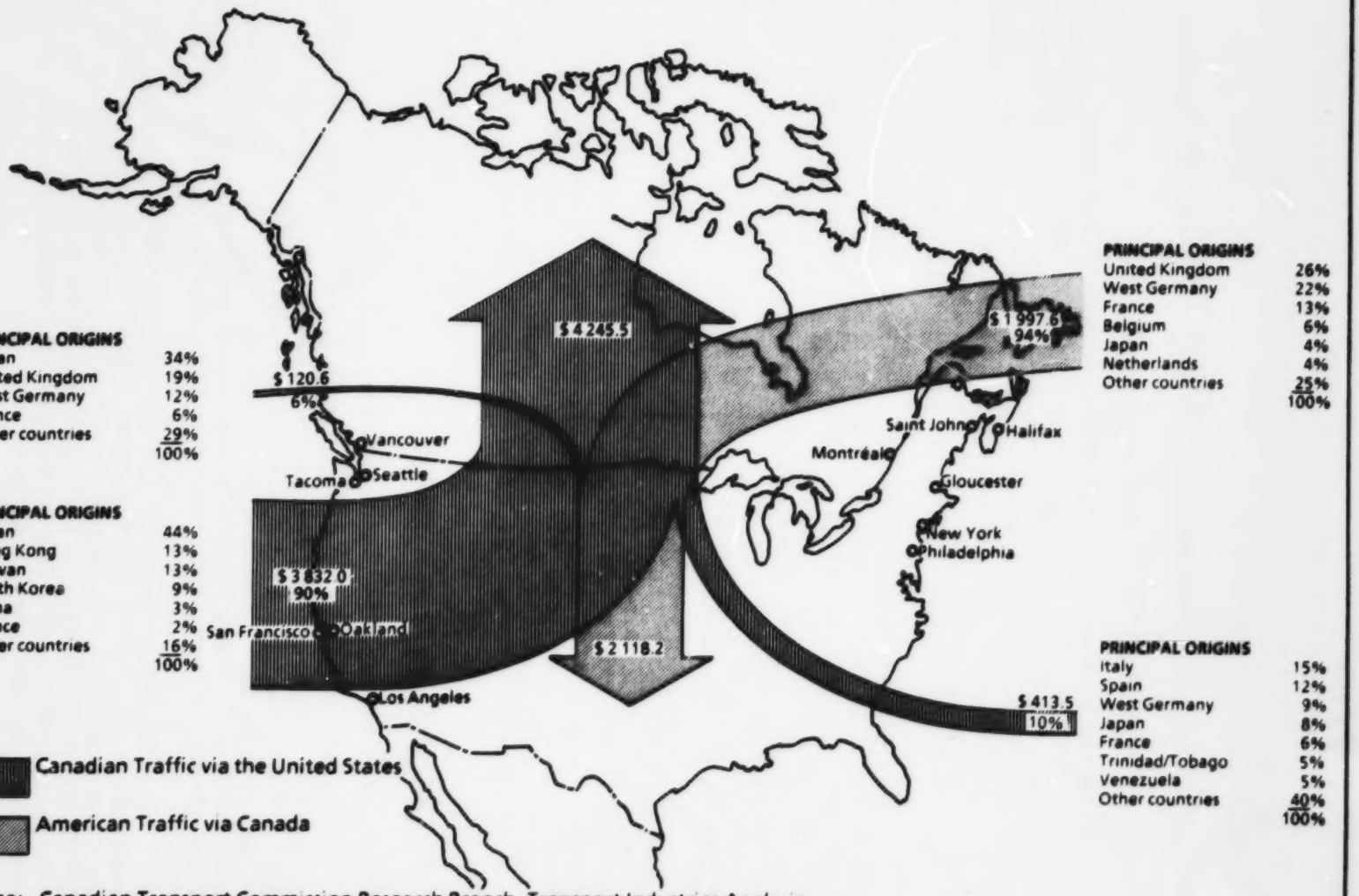
United Kingdom	27%
Belgium	16%
West Germany	13%
USSR	10%
France	10%
Other countries	24%
	100%

PRINCIPAL DESTINATIONS

Japan	11%
Venezuela	9%
Saudi Arabia	8%
Netherlands	8%
Australia	5%
Indonesia	5%
United Kingdom	4%
Others, South America	7%
Other countries	43%
	100%

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Figure 2.2
ROUTING OF DIVERTED IMPORT TRAFFIC
1982
(Millions of U.S. Dollars)



Source: Canadian Transport Commission Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

York City, Ogdensburg (New York) and Milwaukee (Wisconsin). In the West, the main flow of American overseas traffic diverted via Canada passed through the customs districts of Seattle (77%) and Great Falls, Montana (15%).

2.3 Overseas Destinations and Origins of Diverted Traffic

2.3.1 Canadian Traffic

(a) Almost half of the total value of Canadian overseas exports shipped via the United States was destined for Asian countries. Japan alone was the destination for almost 20% of the total value of Canadian exports via the United States. Three other trade areas were important to Canadian exports via the United States: South America, Central America and the Caribbean (18%), Western Europe (13%) and the Middle East (11.5%).

(b) Almost 80% of Canadian overseas imports via the United States came from Asia and were almost entirely received by American Pacific ports. The second area of origin was Western Europe (slightly less than 10%). Six West European countries accounted for almost one-half of imports via the East Coast ports of the United States.

2.3.2 American Traffic

(a) American traffic via Canada was destined mainly for Western Europe. Almost four-fifths of the value of American exports and imports via Canada involved traffic with Western Europe. A significant portion of exports routed via Canada was sent to Eastern Europe (13.2%), principally the USSR; for imports, Asia was the second most important area of origin, accounting for almost 10% of the value of American imports via Canada.

2.4 Diverted Traffic Commodities

2.4.1 Canadian Traffic

(a) Canadian exports diverted via the United States were generally composed of four major categories of commodities (see Table 2.3), each of which accounted for almost 20% of the total value of traffic. These four types of commodities included machinery and transportation equipment (excluding automobiles), food products, semi-fabricated products and crude materials.

(b) Canadian imports routed via the United States were somewhat less evenly distributed. Semi-fabricated products and various end products each accounted for almost one-quarter of the total value of Canadian imports routed through the United States. Food products (including beverages and tobacco) accounted for one-fifth of the total value.

Table 2.3

MAJOR GROUPS OF COMMODITIES SUBJECT TO DIVERSION
1982

(in millions of U.S. dollars)

Description of Commodities	Canadian Traffic Via the U.S.		American Traffic Via Canada	
	Exports	Imports	Exports	Imports
Semi-fabricated products	353.8	1 105.1	212.4	433.6
End products	63.7	1 056.1	256.4	248.6
Food products	368.3	680.7	147.5	96.5
Machinery and transportation equipment*	381.4	476.3	669.0	582.2
Automobiles	130.2	356.3	220.0	221.7
Crude materials	310.0	166.2	229.2	55.7
Chemical products	165.4	177.6	211.6	332.3
Beverages and tobacco	13.7	222.7	1.5	142.3
Various other products**	4.8	4.4	21.8	4.9
Total	1 791.5	4 245.5	1 969.4	2 118.2

*excluding automobiles
**excluding crude oil

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

(c) Automobiles represented 7% of the total value of exports routed via the United States compared to a little over 8% of the total value of imports.

(d) Canadian imports via American Pacific ports were characterized by their very high unit value. In fact, the unit value of Canadian imports via western American ports was four times higher than that of Canadian imports via the eastern American ports.

(e) In 1982, over 90% of the oceanborne carriage of diverted Canadian traffic, in terms of both exports and imports, was handled by liner services.

2.4.2 American Traffic

(a) American traffic via Canada was generally composed of the same groups of products as those found for Canadian diversions via the United States. Machinery and transportation equipment (excluding automobiles) represented the largest commodity group in terms of both imports and exports. This group of products represented one-third of the value of American exports via Canada and one-quarter of American imports via Canada.

(b) Four of the ten major groups of commodities accounted for 45% of diverted American export traffic and almost 60% of diverted American import traffic. These major categories included end products, automobiles, semi-fabricated products and chemical products.

Chapter 3

METHODOLOGY

3.1 Description of Data

Traffic diversion is defined as the transportation of a country's foreign trade commodities to a foreign transhipment point when they could have been sent to a domestic transhipment point. To determine the number of such shipments, one needs data either on the mode of transportation at the exit or entry point of the country from which the overseas traffic originates, or on domestic traffic handled at foreign points when it could have been handled at domestic points. In the first instance, the approach used is deductive because relevant data are not readily produced and presented in an explicit manner. In the second instance, however, the approach is direct since information on the handling of domestic traffic at foreign points directly defines the diversion phenomenon.

The deductive approach is based on the following reasoning: because overseas transport is necessarily by sea or air, all overseas traffic transported at the point of entry or exit to a country by modes other than these can be defined as diverted traffic. This assumes that outbound overseas traffic left the country by overland modes of transportation and was then sent overseas via a foreign port located in an adjoining country; or, that inbound overseas traffic was previously unloaded at a foreign port (located in an adjoining country) and then shipped to the country of destination by overland transportation.

3.2 Availability of Data

Statistical data on diversion, whether in Canada or the United States, cannot be compiled by using the foreign trade data of the two countries. Statistics Canada and the U.S. Bureau of the Census, responsible for their respective country's official statistics, do not compile specific data on traffic diversion.

Nonetheless, Canadian statistics on foreign trade offer indirect information on diverted Canadian overseas exports. Canadian export statistics enable the mode of transport to the Canadian border to be identified, and thus allow the deductive approach previously mentioned to be applied. However, insofar as import traffic is concerned, the identified mode of transport does not necessarily correspond to the mode of entry of commodities into Canada. The mode of transport corresponds more closely to the overland mode of transport used to ship commodities to the customs office, which is usually located at an inland point different from the point of arrival of commodities in Canada.

Thus, in order to assess cargo diversion for both export and import traffic, it was necessary to find a data source other than that pertaining to Canadian foreign trade. An examination of the various statistics produced by the U.S. Bureau of the Census permits identification of Canadian overseas trade loaded and unloaded in American ports.

Furthermore, use of American statistics makes it possible to evaluate American overseas trade routed via Canada since, both with respect to import and export traffic, the American statistical documents make a distinction between shipments sent by air, sea or other modes of transport. Thus, by using a deductive approach, it was possible to determine the scale of American overseas traffic diverted via Canada.

The analysis of the diversion phenomenon, as it pertains to both Canadian and American overseas trade, thus, is based on American statistics,[1] and, unless otherwise stated, all monetary values contained in this study are in U.S. dollars.

3.3 Source of Data

As indicated all data contained in this report are based on American statistics provided by the U.S. Bureau of the Census. More specifically, data on Canadian overseas trade handled by American ports are taken from statistical documents SA 305 entitled "U.S. Waterborne Imports (F.a.s. Value) - General Imports" for import data, and SA 705 entitled "U.S. Waterborne Exports (F.a.s. Value) - Domestic and Foreign Merchandise" for export data. These American statistical data were received on magnetic tape for the years 1978-1982 inclusive.

Data on American overseas trade via Canada were extrapolated from "U.S. General Imports" (IA 245) and "U.S. Exports" (EA 622). The Canadian Transport Commission acquired statistical tapes corresponding to IA 245 and EA 622 for 1982. Statistical data for 1978 to 1981 inclusive were compiled from publications of the U.S. Department of Transportation and the U.S Maritime Administration (MARAD), which are also based on documents IA 245 and EA 622.[2] Moreover, the monthly publication "Highlights of the U.S. Export and Import Trade" of the U.S. Bureau of the Census was used extensively.[3]

The principal data contained on the statistical tapes and describing each of the transactions are as follows:

(a) Canadian traffic via the United States (SA 305 and SA 705):

- the American port of loading/unloading,
- the overseas port of loading/unloading,
- the country of final destination/origin
- the type of ocean service

- a detailed description of products,
- the value of merchandise in U.S. dollars, and
- the weight of the merchandise;

(b) American traffic via Canada (IA 245 and EA 622):

- the American state of exit/entry,
- the mode of transport at the U.S. exit/entry point,
- the overseas country of destination/origin,
- a detailed description of products, and
- the value of merchandise in U.S. dollars.

It should be noted, however, that the statistical tapes acquired from the U.S. Bureau of the Census cover all international traffic in the United States for a given year. Consequently, the first step was to establish a selection and processing system for the original data in order to create a new statistical data base. This new data base regrouped the information required for the study of Canadian and American cargo diversions. The following three sections discuss the principal stages of the methodology used to compile this new statistical data base.

3.4 Compilation of Magnetic Tapes on Canadian Overseas Trade Routed Via the United States

Magnetic tapes corresponding to documents SA 305 and SA 705 cover all ocean traffic, whether American or Canadian, handled by American ports during a given year. The retrieval of data on the flow of commodities originating in or destined for Canada was made possible by attributing a separate code to all non-American traffic. Thus, by excluding all transactions for which the exporting (or importing) country was not the United States, and then by extracting from this data only those transactions classified as coming from (or sent to) Canada and sent to (or coming from) a country other than the United States, the resulting statistics defined Canadian overseas export (or import) traffic handled by American ports. Lastly, because the purpose of the study is to assess Canadian trade routed via the United States, all non-commercial and special transactions were excluded.

3.5 Compilation of Magnetic Tapes on American Overseas Trade Routed Via Canada

The procedure used to evaluate American overseas traffic via Canada was somewhat more complicated because this traffic is not explicitly recorded as such in American statistics. Nonetheless, it was possible to isolate all merchandise shipped to (or coming from) overseas countries for which the mode of transport at the American exit (entry) point was either by sea or air.

The procedure therefore consisted in isolating all overseas trade (worldwide, except for Canada and Mexico) transported at the American point of exit (for exports) and the American point of entry (for imports) by either sea or air. The premise underlying this approach is that all overseas routing is of necessity by sea or air and that, as a result, any overseas routing not associated with one of these modes is, by deduction, diverted by overland modes of transport via Canada or Mexico, the two countries adjoining the United States. This first step provided figures for all diverted American traffic. A distinction then had to be made between traffic diverted through Canada and that diverted through Mexico.

American customs declaration procedures require that all exported commodities be declared at the customs office located at the U.S. point of exit. Thus, for American export traffic, cargo diversions through Canada were drawn from records at customs districts along the Canada-U.S. border. More specifically, the diversion of American overseas exports through Canada was evaluated solely on the basis of traffic registered in the customs districts of the following American states: Washington, Montana, North Dakota, Minnesota, Wisconsin, Michigan, Illinois, Ohio, New York, Vermont and Maine.

American customs declaration procedures concerning imports are different than those pertaining to exports, in that the customs district which registers imported commodities is not necessarily the arrival district in the United States. For example, commodities may well cross the Canada-U.S. border in the Detroit-Windsor region but pass through customs in St. Louis, Missouri. In this example, the registering customs district is St. Louis and not that in the state of Michigan where the product first arrived on American soil by way of Canada. In the American statistical documents, only the customs district that registers the product is identified; the point of entry into the United States is not identified when the mode of transport is not by sea or air. It is therefore impossible to determine with accuracy the portion of American imports diverted via Canada and the portion diverted via Mexico.

In order to circumvent this problem, we arbitrarily determined those groups of American states for which cargo diversion would be strictly via Canada or strictly via Mexico.[4] A northern belt of American states was defined as the group for which cargo diversion would be strictly via Canada and a southern belt for diversions strictly via Mexico. A central band, corresponding roughly to the central United States, was defined as being a grey area where it would be impossible to determine with accuracy whether American cargo was diverted via Canada or Mexico.

The northern belt of American states includes the customs districts of Washington, Montana, North Dakota, Illinois,

Ohio, Minnesota, Michigan, Wisconsin, New York, Vermont, Maine (i.e. the border states), Oregon, Washington D.C., Virginia, Maryland, Pennsylvania, Connecticut, Rhode Island and Massachusetts. The central band includes the American customs districts of Missouri, California, North and South Carolina (see Figure 3.1).

Maritime imports of petroleum products are not registered in maritime cargo statistics. These products had to be excluded from our analysis of diversions since it was impossible to distinguish between direct as opposed to indirect diversion via Canada or Mexico. Lastly, as in the case of Canadian trade via the United States, all non-commercial or special transactions were excluded from the cargo diversion analysis.

3.6 Commodity Classification

The statistical tapes used to compile the data base on Canadian overseas trade diverted via the United States permit an adequate description of the type of commodities involved to be determined. Export traffic products are described directly in terms of "Schedule E Export Classifications"; imported products are listed according to "Schedule A Import Classifications". These two commodity classifications are established on the basis of the "Standard International Trade Classification" (SITC), and thus enable the data of other countries to serve as a point of comparison, at least to some degree.

Primary data on American overseas trade diverted via Canada classify commodities in accordance with the "Tariff Schedules of the United States Annotated" (TSUSA). These schedules are established for customs purposes and are not appropriate for descriptive analysis. It was therefore necessary to reconvert all transactions covered by the "Standard International Trade Classification". Data on diverted American export commodities were reclassified according to Schedule E and those on import commodities according to Schedule A, as were data on diverted Canadian traffic. The link between various classifications was established by data processing techniques and was based on the information sent by the U.S. Bureau of the Census.

Lastly, although all the commodities originally had four digit classification codes, the findings contained in this study follow a one- or two-digit classification system. This system, judged adequate for the purposes of this report, distinguishes between 68 types of commodity and 10 major categories, respectively (see Appendix B).

Figure 3.1

MAP SHOWING CANADIAN AND MEXICAN AREAS OF DIVERTED AMERICAN OVERSEAS IMPORT TRAFFIC

Source: Canadian Transport Commission, Research Branch.

3.7 Specific Factors Regarding the Evaluation of American Data[5]

Data on Canadian overseas traffic diverted via the United States and American traffic diverted via Canada are expressed in "free alongside ship" (FAS) values. The evaluation of each commercial transaction is therefore equivalent to the sale price of the product, plus the total of various sundry charges (transportation, insurance, etc.) paid to transport the merchandise to the exit point of the exporting nation, where it is taken in charge by the carrier.

All the statistics used in compilation of data tapes, both for Canadian import traffic via the United States (1978-1982 inclusive) and American import traffic via Canada (1982), were compiled from data on "General Imports" as opposed to "Imports for Consumption". General imports usually include all commodities arriving in the United States, whether distributed immediately on the domestic market, placed in storage or re-exported. On the other hand, imports for consumption include only commodities for immediate distribution on the domestic market.

Lastly, for the flow of American overseas commodities exported and imported via Canada, the data utilization process, described in Section 3.5, is similar to that used in the American publication "U.S. Exports and Imports Transhipped via Canadian Ports". It is necessary to specify that, according to this methodology, traffic is not registered directly in Canadian ports; as a result, Canadian loading and unloading ports, as well as the modes of transportation to Canada, are not known. It is, however, realistic to assume that a portion of the commodities are loaded or unloaded in Canadian airports. This uncertainty does not, however, exist for Canadian traffic via American ports since commodities are registered directly there.

3.8 Exactitude of Results

Statistical tapes from the U.S. Bureau of the Census are the only currently known source that records all flows of American and Canadian commodities diverted via Canada or the United States, respectively.

For Canadian commodities traffic via the United States, the only means of checking the exactitude of American official statistics is by reference to data on Canadian overseas exports via the United States supplied by the External Trade Division of Statistics Canada. Generally speaking, these two sources of statistics enable us to detemine export-related results of a similar scope (see Appendix F).

FOOTNOTES

[1] We did, however, compare the estimate of diverted Canadian export traffic based on Canadian statistics with that based on American statistics. In general, our findings based on the two sources of statistics were comparable in terms of their measurement of diverted Canadian exports. This similarity of findings on exports leads us to believe that an estimate of diverted Canadian imports based on American statistics would be equally valid.

A detailed statistical report on the diversion of Canadian overseas exports, based on Canadian external trade statistics for 1981, was produced in 1984 by the Canadian Transport Commission, Research Division: Acheminement en territoire américain du commerce outre-mer canadien à l'exportation - Marchandises générales, Année 1981, Working paper WP-20-84-19, Ottawa-Hull, 1984.

[2] U.S. Department of Commerce, Maritime Administration, U.S. Exports Transhipped via Canadian Ports, January 1978; U.S. Exports & Imports Transhipped via Canadian Ports, March 1981;

U.S. Department of Transportation, Maritime Administration, U.S. Exports & Imports Transhipped via Canadian Ports, March 1982; U.S. Exports & Imports Transhipped via Canadian Ports, July 1983.

[3] U.S. Bureau of the Census, Highlights of the U.S. Export and Import Trade, Report FT 990, December issues, 1978-83.

[4] The methodology used by American authorities to estimate their diverted traffic also includes an arbitrary approach.

[5] The reader will find a detailed description of the nature and characteristics of American statistics in the following publications:

U.S. Department of Commerce, U.S. Bureau of the Census, Guide to Foreign Trade Statistics - 1983, September 1983, and U.S. Foreign Trade Statistics, Classifications and CrossClassifications -1980, February, 1981.

Chapter 4

THE DIVERSION CONCEPT

This chapter presents some conceptual elements of the traffic diversion phenomenon and discusses certain geographical aspects of diversion between Canada and the United States.

4.1 Definition of Diverted Traffic

The standard definition of diverted traffic is as follows: with respect to international trade, the routing of commodities via ports or airports in a country which is neither the country of first origin nor final destination. The problem lies in determining the international routes and itineraries used for the "indirect" flow of overseas trade commodities.

"Indirect" routes and itineraries denote the routing of commodities to a foreign international transhipment point (port or airport) when they could have been routed to a domestic transhipment point located in the country of origin or destination. This is an important distinction. In the context of diverted traffic, commodities, for various reasons, are transported and transhipped via a country which is not the final destination or the first origin of the commodities.

From this initial definition, it is evident that a study of diverted traffic can be approached in two stages. First, determine the nature and scope of the phenomenon, and then find the instruments that provide the quantitative and qualitative information required to determine accurately the current state of traffic diversion. This, is the data gathering and processing stage.

Subsequently, after completing this descriptive phase, establish, from the economic structures and agents involved, the causes and effects of traffic diversion. This more analytical phase may involve researching purely economic factors (for example, transportation costs or port service productivity). However, some of these factors are not of an economic nature. They may be very diverse and relate to the particular environment in which the international commodities transportation system operates (national and international law, socio-economic and political aspects of transportation).

The present study of diverted Canadian and American traffic is based on the above plan of approach.

4.1.1 Direct and Indirect Routes

In the introduction to this chapter, the term "indirect international itinerary" was used. This distinction between direct and indirect helps to differentiate between diverted and non-diverted traffic.

Direct routes are, of course, the most common. Commodities from the country of origin, when sent primarily by air or sea, are shipped overland to the domestic port or airport, complete the international leg of their journey and are finally directed inland in the country of destination from the unloading port or airport. Here, the direct route concept does not necessarily signify the shortest route, in terms of distance. For example, commodities sent to Japan are often loaded in ports in Eastern Canada.[1] In this instance, there is no traffic diversion to the detriment of ports in the West, but simply a routing decision based on various factors and economic or operational conditions in a national context.

However, passage through one or more foreign countries does not necessarily imply that traffic diversion has occurred. For example, in the case of Canadian seaborne exports to landlocked countries such as Switzerland or Czechoslovakia, there will obviously be transhipment in a European seaport which is neither the country of origin or destination of the commodities. The geographical location of the (landlocked) country of final destination necessarily implies passage through countries of transit. Traffic of this sort should not be considered as diverted traffic. However, when commodities are routed through other than the ports or airports of the country of origin or destination, i.e., when an indirect route develops despite the geographic position of countries accessible by direct routes, then traffic diversion is said to have occurred.

4.1.2 Types of Diversion

Needless to say, diverted traffic is found only in transoceanic or overseas trade. Transborder commodities shipped by rail or truck involve transit phenomena only when the two trading countries are not adjoining. This is the case, for example, for overland trade between Canada and Mexico transported through the United States.

In the case of transoceanic trade, our specific interest is in the overland routing of commodities which later become either seaborne or airborne cargo. The use of foreign ports, as points of departure for commodities transported overseas, constitutes diverted seaborne traffic.[2] Moreover, some overseas foreign trade is conducted by air. The choice of a foreign airport and the amount of traffic bypassing domestic airports constitute diverted airborne traffic.

4.1.3 Shared Hinterlands

The possibility of sending cargo either through a domestic or a foreign port implies a particular geographical situation: several countries must share a common seaboard and, as a result, their ports must serve a shared hinterland.

The generally accepted definition of hinterland is the zone of influence of port services, i.e., the zones from which ports receive commodities for loading or to which they send unloaded commodities.[3] More specifically, for each port or group of ports it is possible to draw up a "surface map" of its spheres of influence; in other words, to define the port's hinterland is to determine where the demand for port services originates and where the potential importers and exporters of commodities transhipped in these ports are located.

The traffic diversion phenomenon is found when the ports of different countries sharing a common seaboard are in a potentially competitive situation, for they may all claim to serve not only the markets of the country in which they are located but also those of the neighbouring countries. In such cases, the actual hinterland goes beyond international borders. In a market economy, the choice of port is not linked to the "nationality" of commodities, but to other operational (services, available networks, etc.), economic (cost, speed, quality of services) or institutional considerations.[4]

A more precise definition and conceptualization of hinterlands and competition between ports can be achieved by quantifying the competition between ports and defining their hinterlands in terms not only of distance but also transportation time or cost, and volume, expressed in absolute or relative values.[5] Another method is to use the ocean cargo flow trend indices of the foreign region served in relation to ports of passage of commodities involved. These various approaches can lead to the mapping of hinterlands that differ from those obtained from a simple geographical approach. The delimitation of hinterlands is especially important when evaluating the "divertable" trade regions in order to determine potential divertable traffic and thus be in a position to compare it with traffic actually diverted.

4.1.4 Diverted Traffic: Co-Existence of Two Realities

From the various aspects of diversion discussed above, it appears that the notion of traffic diversion is in fact the result of two superimposed levels of analysis.

First, at the origin of the international commodities movement is the exchange between a buyer and seller who, by contract, agree upon the terms of the exchange and the conditions governing transportation.[6] These two parties are motivated by

the entrepreneurial forces in a market economy. Transportation is part of the logistics of a business. Whoever the economic agent (importer, exporter, shipper), his job is to find the best choice of transportation in order to remain competitive in the world market. On this level, the shipment of commodities via a foreign port is rarely considered as diversion. The economic agent is not diverting cargo but merely choosing the route best suited to his needs.

Second, the flow of commodities in international trade means the use of domestic space, networks and services which depend on domestic institutions and, to a certain extent, on national policies. The use or non-use of a port by the parties concerned may pose economic, political and social problems for a nation. At this level, the line of reasoning is obviously very different from that of an independent economic agent.

The term "diversion" reflects this duality. One dictionary describes it as the act of changing course or direction. At the macroeconomic or national level, this is an apt definition. National commodities do not follow the "normal" or "natural" direction of domestic ports or airports; such flows are thus rerouted and withdrawn from domestic port and airport traffic as a whole. However, the term diversion is less well suited to describe the action of the private economic agent. In practice, he does not change the direction of shipped commodities but, as mentioned earlier, ships along the route which seems best suited to his needs. In this regard, diversion often carries a negative connotation and may sometimes be inappropriate. For the purposes of this study, the term diversion is used solely to describe traffic routed via an intermediate country, carries no value judgement and is based on the definitions presented in this chapter.

Moreover, as noted by George M. Jones,[7] the term "diversion" would be inappropriate to describe a normal freight route, even if this implies the use of another country's port. The term is correctly used only for temporary changes in the chosen itinerary because of a strike in the port or some other event. In this case, reference is made to the normal use of a freight route. If diversion has occurred for a number of years for the same type of product, it is no longer a diversion in the dictionary sense of the word. The expression "indirect route", in the sense previously used, would be more apt.

4.2 Diversion Geography

When several countries offer port services on the same seaboard, and when a significant number of countries are integrated with the shared hinterland of these ports, competition is created between ports and gives rise to complex diversion patterns. This is particularly the case in Europe where, for example, in the North Sea/English Channel alone, the ports of

four countries (Germany, Holland, Belgium and France) compete not only for one another's traffic, but for that of other European countries as well.

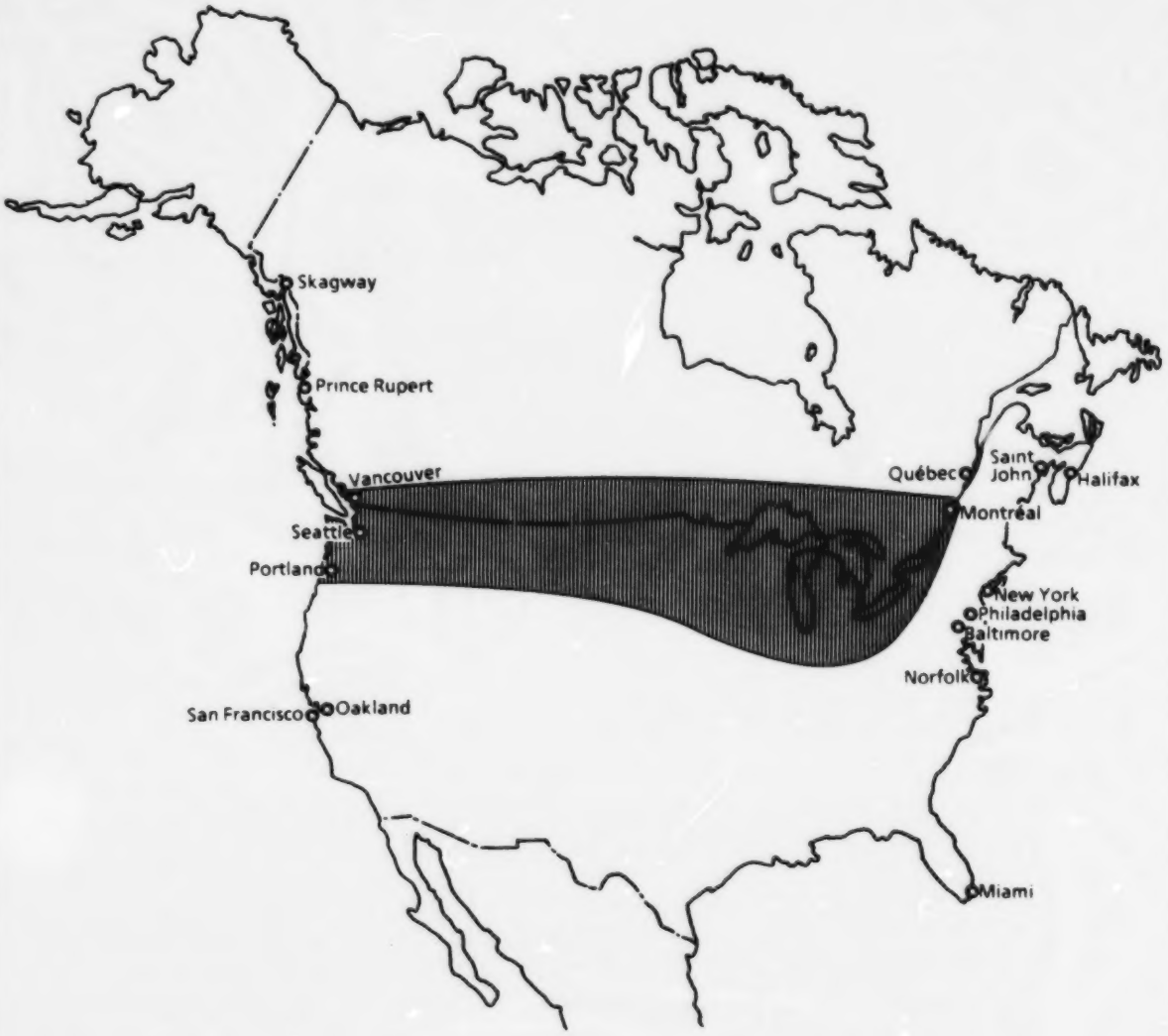
In North America, the situation is relatively more simple. Canada and the United States occupy the major portion of the continent and both have the same two seaboards. Figure 4.1 shows the principal competing ports as well as the regions generally said to be involved in diversion. For ports on the Atlantic seaboard, the shared hinterland is considered to include the Great Lakes region and the American Midwest. The principal ports of Eastern Canada (Halifax, Montréal, Saint John) all compete with the major American ports of New York, Baltimore, Philadelphia and Norfolk. On the Pacific seaboard, the shared hinterland is more limited, and competition is largely between Vancouver and the American ports of Seattle, Portland and certain Californian ports.

It should be noted, however, that the hinterland defined on this map does not include areas close to ports. In other words, we have adopted the hypothesis that areas within short and medium range of the ports are captive markets which cannot be infiltrated by foreign ports. This restricts the definition of shared hinterland. Diverted traffic phenomena may and do occur in areas excluded by the simple geographical approach because of their proximity to a given port. Although it is less probable that such zones would use a foreign port than would more remote areas, it is nonetheless a possibility and they should be included as forming part of the shared hinterland.

Various explanations beyond that provided by a simple geographical analysis can be found for competition between domestic and foreign ports in certain areas (economic, operational, regulatory, business strategy, etc.).

Chapter 9 supplies a detailed analytical description of the various possible approaches to the study and analysis of traffic diversion. A more complete analytical framework for the examination of diversion phenomena is suggested from three different perspectives: the perspective of the carriers, that of port communities, and lastly, of government authorities.

Figure 4.1
HINTERLANDS SHARED BY THE UNITED STATES AND CANADA, AND MAJOR COMPETING PORTS



Source: Canadian Transport Commission, Research Branch.

FOOTNOTES

[1] Canadian Transport Commission, Research Branch, "Canadian Overseas Exports of General Cargo and Port Activity in Eastern Canada", Report No. 1984/05E, Ottawa-Hull, July 1983.

[2] The following situation may also arise: seaborne freight arrives in transit at a foreign port (when it could have arrived directly in the domestic port), and is then sent by the same mode to the domestic port. In such cases, we speak of feeder services or, in the words of some authors, "semi-diverted traffic". This type of sea route does not involve a loss of port activity for domestic ports; however, it changes the nature of ocean services available at a port. For example, a liner service serving only New York would unload Canadian commodities which would later be sent to Canada.

[3] The term "hinterland" is a word of German origin, originally used by geographers and commonly used to define the areas surrounding a port. The concept of hinterland is discussed in a report of the National Harbours Board, Foreign Traffic Hinterlands of the Ports of Halifax and Saint John, Grace L. Powell, National Harbours Board, Ottawa, February 1968.

[4] The phenomenon is similar with respect to airports. In this case, the geography of diversion, although different, follows the same principle: the possibility of a choice between a domestic or foreign airport. As in the case of maritime hinterlands, competition arises between airports capable of serving the same areas regardless of international borders.

[5] Jacques Charlier in Villes et ports: "Développement portuaire, croissance spatiale des villes, environnement littoral", Second Franco-Japanese Geography Colloquium, published by the Centre national de la recherche scientifique, Paris, 1979, p. 393-420.

[6] "Incoterms" were created for the first time in 1953 by the International Trade Practices Board of the International Chamber of Commerce. The purpose of Incoterms is to establish optional and voluntary rules to facilitate and clarify the interpretation of the principal terms used in international sales and transportation contracts.

[7] George M. Jones, "U.S.-Canada Cargo Diversion: A Century Old Phenomenon", published in Container News, September 1972.

Chapter 5

TRENDS IN CANADIAN AND AMERICAN DIVERTED TRAFFIC

This chapter discusses the five-year trends, from 1978 to 1982, in the principal characteristics of Canadian traffic via the United States and American traffic via Canada. Its purpose is to show the general trends over a five-year period as well as to verify whether the 1982 "structure" of diversion, as described in the following chapters, applies to a longer period.

5.1 Overview of Trends: 1978-1982

Table 5.1 shows the value of Canadian traffic via the United States and American traffic via Canada, in terms of both exports and imports, during the 1978-1982 period. The total value of traffic is broken down by customs clearance in the Canadian or American East or West, and by "traffic balances". These balances are defined as the difference between the value of American traffic via Canada and Canadian traffic via the United States. By definition, the balance will be positive when the value of American traffic via Canada is greater than Canadian traffic via the United States. In other words, positive balances indicate a favourable situation for Canada. Conversely, negative balances indicate that Canada had a traffic "deficit": i.e., there was more Canadian traffic via the United States than American traffic via Canada.

Overall, Canadian traffic via the United States was consistently heavier than American traffic via Canada for the period under study, the exception being 1978, when the balance was slightly in Canada's favour.

However, the distinction between export and import traffic shows that, over the entire period studied, diverted export traffic was always favourable to Canada. Import traffic diversion, however, was extremely disadvantageous to Canada except in 1978, when Canadian imports via the United States were slightly lower than those of the United States via Canada.

By differentiating between diversion via the East or West, it is possible to determine more accurately the true structure of diversion between Canada and the United States. Traffic diverted in 1979-1982 on the East Coast exhibited three major characteristics[1]. First, with respect to both exports and imports, the balance of traffic diverted via the East was consistently very beneficial for Canada. Second, American traffic via the East Coast of Canada always represented the major portion of diverted American traffic via Canada; moreover, as of 1980, this considerable American traffic via Canada was evenly distributed between exports and imports. Third, Canadian export

Table 5.1

TRENDS IN CANADIAN TRAFFIC VIA THE UNITED STATES AND AMERICAN TRAFFIC VIA CANADA BETWEEN 1978 and 1982

(in millions of U.S. dollars)

	Canadian Traffic Via the United States			American Traffic Via Canada			Balance		
	Exports (1)	Imports (2)	Total (3)	Exports (4)	Imports (5)	Total (6)	Exports (4)-(1)	Imports (5)-(2)	Total (6)-(3)
East Coast									
1978	710.1	212.1	922.2	NA	NA	NA	NA	NA	NA
1979	772.5	367.7	1 140.2	1 159.0	1 988.7	3 147.7	+386.5	+1 621.0	+2 007.5
1980	920.5	426.2	1 346.7	1 874.9	2 052.1	3 927.0	+954.4	+1 625.9	+2 580.3
1981	1 264.0	424.5	1 688.5	2 220.7	2 444.6	4 665.3	+956.7	+2 020.1	+2 976.8
1982	1 177.4	413.5	1 590.9	1 759.7	1 997.6	3 757.3	+582.3	+1 584.1	+1 966.4
West Coast									
1978	192.9	1 384.7	1 577.6	NA	NA	NA	NA	NA	NA
1979	199.8	2 865.9	3 065.7	152.6	66.0	218.6	- 47.2	-2 799.9	-2 847.1
1980	338.8	3 846.0	4 184.8	224.2	84.2	308.4	-114.6	-3 761.8	-3 876.4
1981	466.9	5 235.9	5 702.8	207.5	96.7	304.2	-259.4	-5 139.2	-5 398.6
1982	614.1	3 832.0	4 446.1	209.8	120.6	330.4	-404.3	-3 711.4	-4 115.7
Total									
1978	903.0	1 596.8	2 499.8	978.8	1 696.2	2 675.0	+ 75.8	+ 99.4	+ 175.2
1979	972.3	3 233.6	4 205.9	1 311.6	2 054.1	3 366.3	+339.3	-1 178.9	- 839.6
1980	1 259.3	4 272.2	5 531.5	2 099.1	2 136.3	4 235.4	+839.8	-2 135.9	-1 296.1
1981	1 731.0	5 660.4	7 391.4	2 428.2	2 541.3	4 969.5	+697.2	-3 119.1	-2 421.9
1982	1 791.5	4 245.5	6 037.0	1 969.4	2 118.2	4 087.6	+177.9	-2 127.3	-1 949.4

Note:
NA = not available.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

traffic diverted via eastern American ports at all times represented more than two-thirds of Canadian traffic diverted via the East Coast of the United States and, since 1981, has represented three-quarters.

On the West Coast, the situation was reversed. First, throughout the period studied, the balance of traffic was extremely negative for Canada, particularly with respect to import traffic. Second, diversion of American traffic via Western Canada was very limited, both for exports and imports. Third, Canadian traffic diverted via the Western United States was dominated by increased Canadian imports routed through American Pacific ports. These imports alone consistently represented more than half of the total diversion of Canadian traffic via the United States and over 85% of Canadian traffic diverted via the Pacific coast of the United States.

It thus appears that, during the period in question, the diversion picture remained unchanged in terms of the balance of traffic diverted between Canada and the United States. First, since 1979, there was more Canadian overseas traffic via the United States than American overseas traffic via Canada, in terms of value. Second, this overall deficit is explained by the fact that, although Canada benefited from diverted traffic on the East Coast, the benefit (from 1979-1982) was well below the traffic deficits recorded on the West Coast. Thus, Canada's "gain" in East Coast traffic in 1979 represented only 70% of its "loss" in the West (67% in 1980, 55% in 1981, 48% in 1982). The change of this proportion shows that, over these four years, Canadian gains in eastern traffic increasingly failed to offset losses in the West.

5.2 Traffic Distribution Between East and West

The East-West distribution of diverted traffic shows, in percentage terms, the respective values of diversions recorded in the Eastern and Western United States[2]. Table 5.2 shows changes in 1978-1982 between the East-West distribution of Canadian traffic via the United States and American traffic via Canada.

The portion of Canadian exports diverted via the Eastern United States declined in relation to that diverted via the Western United States. In other words, diverted Canadian exports via the United States grew in the West even though, in 1982, two-thirds of exports were diverted via the East Coast as opposed to one-third via the West Coast. Diverted Canadia imports were primarily routed via the Western United States (90%). This trend became more pronounced over the 1978-1981 period and slowed slightly in 1982.

American imports and exports diverted via Canada were primarily routed through Eastern Canada. The proportion of

Table 5.2

TRENDS IN THE EAST/WEST DISTRIBUTION OF CANADIAN TRAFFIC
VIA THE UNITED STATES AND OF AMERICAN TRAFFIC VIA CANADA
1978-1982

(in percentages)

	Canadian Traffic Via the United States				American Traffic Via Canada			
	Exports %		Imports %		Exports %		Imports %	
Year	East	West	East	West	East	West	East	West
1978	78.6	21.4	13.3	86.7	NA	NA	NA	NA
1979	79.4	20.6	11.4	88.6	88.4	11.6	96.8	3.2
1980	73.1	26.9	10.0	90.0	89.3	10.7	96.1	3.9
1981	73.0	27.0	7.5	92.5	91.4	8.6	96.2	3.8
1982	65.7	34.3	9.5	90.3	89.3	10.7	94.3	5.7

Note:
NA = not available.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

American exports diverted via Western Canada declined from 1979 to 1981. By contrast, the proportion of American imports diverted via Western Canada increased slightly between 1978 and 1982.

5.3 Growth of Diverted Traffic

The values shown in Table 5.1 are expressed in current dollars. It is not appropriate to determine annual fluctuations from these values since they are affected by changes in the value of the dollar caused by inflation. To reduce the problems inherent in the use of current dollars, diverted Canadian traffic values have been converted into constant dollars (1978 dollars)[3]. These values are shown in Table 5.3 along with variation percentages for each year.

5.3.1 Canadian Traffic Via the United States

The value of Canadian exports via the United States diminished in real terms in 1979 but increased steadily thereafter until 1982, with a major advance in 1981. Annual growth on the West Coast was strongest. After a marked decline in 1979, the value of Canadian exports via the West Coast of the United States showed a constant increase. In 1982, Canadian exports via the Western United States were more than double that of 1978. On the East Coast, annual growth was irregular. Even in 1981 when Canadian exports via Eastern American ports increased sharply, the diversion value was only 1.2 times greater than in 1978, and in 1982 barely 1.1 times greater than in 1978.

Despite the sharp decline observed in 1982, Canadian imports via the United States grew significantly over the period: in 1981, Canadian imports via the United States were 2.4 times greater than the 1978 level (in constant dollars) and in 1982, despite a major decline from the preceeding year, they were still 1.8 times greater than in 1978. Growth was apparent only on the West Coast; on the East Coast, Canadian imports via the United States declined slowly from 1980. In 1982, they reached a level equal to 90% of that observed in 1979.

5.3.2 American Traffic Via Canada

Total American exports via Canada increased sharply in 1979 and 1980, slightly in 1981 and dropped in 1982. In 1982, their value was 1.4 times greater than in 1978.

American exports via Western Canada remained practically unchanged, at a relatively low level. Growth in American exports via Canada essentially occurred in Eastern Canada (1980 especially). In 1981, American exports via Eastern Canada were 1.5 times greater than their 1979 level and, in 1982, 1.2 times greater.

Table 5.3

ANNUAL VARIATION OF CANADIAN TRAFFIC VIA THE U.S.
AND AMERICAN TRAFFIC VIA CANADA

(in millions of constant 1978 U.S. dollars)

Year	Canadian Traffic Via the U.S.				American Traffic Via Canada			
	Exports		Imports		Exports		Imports	
	Value	% Variation	Value	% Variation	Value	% Variation	Value	% Variation
East Coast								
1978	710.1	-	212.1	-	NA	-	NA	-
1979	638.2	-10.1	321.0	+51.3	1 018.9	-	1 667.3	-
1980	654.3	+ 2.5	319.3	- 0.5	1 451.4	+42.4	1 371.8	-17.7
1981	845.0	+29.1	287.3	-10.0	1 574.3	+ 8.5	1 548.9	+12.9
1982	780.3	- 7.7	275.4	- 4.1	1 233.5	-21.6	1 286.9	-16.9
West Coast								
1978	192.9	-	1 384.7	-	NA	-	NA	-
1979	165.1	-14.4	2 502.2	+80.7	134.1	-	55.3	-
1980	240.8	+45.8	2 880.9	+15.1	173.6	+29.4	56.3	+ 1.8
1981	312.1	+29.6	3 544.1	+23.0	147.1	-15.2	61.3	+ 8.8
1982	407.0	+30.4	2 552.1	-28.0	147.1	0.0	77.7	+26.7
Total								
1978	903.0	-	1 596.8	-	978.8	-	1 696.2	-
1979	803.4	-11.0	2 823.2	+76.8	1 153.0	+17.8	1 722.7	+ 1.7
1980	895.1	+11.4	3 200.2	+13.3	1 624.9	+40.9	1 428.1	-17.1
1981	1 157.1	+29.3	3 831.4	+19.7	1 721.4	+ 5.9	1 610.2	+12.8
1982	1 187.3	+ 2.6	2 827.5	-26.2	1 380.5	-19.8	1 364.5	-15.3

Notes:
- = Percentage calculation not required or not possible.
NA = not available.
Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

In 1981, the level of American imports via Canada was roughly the same as in 1978, but in 1982 was almost 20% lower. Despite limited annual growth in the West, American imports via Canada have virtually stagnated since 1979; they have not exceeded $80 million. In the East, American imports via Canada, despite an increase in 1981, plummeted over the five-year period, and in 1982 their value was 22% less than in 1979. Thus, American imports diverted via Canada exhibit, in real terms for the period under study, a downward trend.

5.4 Comparative Standing of Canadian and American Diversions

By studying the annual variations in constant dollar values, we were able to trace the "historical" evolution of each diverted flow. However, this approach did not enable us to determine fully whether diverted traffic developed to the benefit of Canada or the United States. Table 5.3, for example, shows that Canadian imports via the West Coast of the United States declined by 28% in 1982, whereas American imports via the West Coast of Canada grew by more than 25% in the same year. Moreover, the structure of the diverted traffic deficit in the West is not clear because the decline in Canadian imports in 1982 was based on $3.5 billion whereas the American increase was based on only $61 million.

The ratio of the value of Canadian traffic via the United States to that of American traffic via Canada provides a better understanding of the traffic trend. When both are equal, there is a traffic balance. The more the ratio is less than 1, the more Canada benefits (since the value of American traffic via Canada is greater than Canadian traffic via the U.S.). Conversely, the more the ratio is greater than 1, the more Canada suffers a traffic deficit vis-à-vis the United States.

The ratio of Canadian total traffic via the United States to American total traffic via Canada worsened for Canada from 1979, and stabilized in 1982 (Table 5.4). Whereas in 1978 the ratio was in Canada's favour, it went from 1.25 in 1979 to 1.48 in 1982, signifying that in 1982 the value of Canadian traffic via the United States was almost 1.5 times greater than American traffic via Canada.

The trend was different on the East Coast, where the balance of diverted traffic was very much in Canada's favour and had been since 1979, despite a marked decline in 1982. On the East Coast, Canada's advantage was particularly apparent in terms of diverted import traffic. Canada's advantage in export traffic was less significant, but relatively stable.

On the West Coast, the balance of diverted traffic was highly unfavourable to Canada and had been so since 1979, especially with respect to imports. In 1979, Canadian imports via the Western United States were almost 43 times greater than

Table 5.4

TRENDS IN THE RATIO* OF CANADIAN OVERSEAS TRAFFIC VIA THE UNITED STATES TO AMERICAN OVERSEAS TRAFFIC VIA CANADA

1978-1982

	Exports	Imports	Total
East Coast			
1978	NA	NA	NA
1979	0.67	0.18	0.36
1980	0.99	0.21	0.34
1981	0.57	0.17	0.36
1982	0.67	0.21	0.42
West Coast			
1978	NA	NA	NA
1979	1.31	43.42	14.02
1980	1.51	45.68	13.57
1981	2.25	54.15	18.75
1982	2.93	31.77	13.46
East Coast and West Coast			
1978	0.92	0.94	0.93
1979	0.74	1.57	1.25
1980	0.60	2.00	1.31
1981	0.71	2.22	1.49
1982	0.91	2.00	1.48

* Calculated from data in current dollars.

Note:

NA = not available.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

American imports via Western Canada. In 1981, they were 54 times greater. In 1982, the balance diminished noticeably without, however, reversing the trend since, in 1982, Canadian imports via the Western United States were still almost 32 times greater than American imports via Western Canada. With regard to exports, there was a growing imbalance unfavourable to Canada.

In summary, the overall balance of diverted exports was favourable for Canada from 1978 to 1982. However, since 1981, this advantage has tended to diminish because the advantage of the East Coast slipped from 1980 onwards and the diverted export deficit of the West Coast worsened. However, the overall balance of diverted imports was unfavourable for Canada as of 1979 and this trend became more pronounced in 1981. The reason for this was the growing deficit of imports diverted to the West to the detriment of Canada, which is compensated less and less by the diverted imports surplus in the East in Canada's favour (Table 5.3). In 1982, the growth of the diverted imports deficit slowed, primarily because of fewer Canadian imports via the Western United States. Despite this slowdown in 1982, Canadian imports via the United States remained twice as great as American imports via Canada.

5.5 Trends in the Scope of Canadian and American Diversions

One approach to the study of diverted traffic is to measure the significance of such traffic as part of the entire body of a country's foreign trade. The diversion rate is a simple indicator for measuring this significance.

The diversion rate for a given country represents its overseas exports and imports diverted via a neighbouring country as a proportion of its total overseas exports and imports.

Table 5.5 shows the diversion rates for Canada and the United States from 1978 to 1982, and reveals two principal findings. First, diversion rates, regardless of the year, were much lower in the United States than in Canada. This means that American overseas traffic routed via Canada represented a relatively small portion of all U.S. overseas trade. However, Canadian overseas traffic via the United States represented a considerable portion of all Canadian overseas trade. Second, the diversion rate for American traffic remained stable. From 1978 to 1982, the portion of American overseas trade diverted via Canada increased marginally; however, the portion of Canadian overseas trade diverted via the United States increased significantly. Detailed analysis shows that the portion of Canadian overseas trade routed via the United States grew from 10% in 1978 to 16% in 1982.

After sliding from 1978 to 1981, the diversion rate for Canadian exports via the United States made a strong comeback in 1981 and 1982. Over the five-year period, this rate reached a

Table 5.5

TRENDS IN CANADIAN AND AMERICAN DIVERSION RATES

1978-1982

(in percentages)

Canadian Overseas Traffic Via the United States	1978	1979	1980	1981	1982
Total Canadian overseas exports	6.5	5.4	5.3	7.4	8.3
Total Canadian overseas imports	15.7	27.6	24.4	26.8	26.5
Total Canadian traffic with overseas countries	10.4	14.2	13.3	16.4	16.0
American Overseas Traffic via Canada					
Total American overseas exports	0.9	0.9	1.2	1.3	1.2
Total American overseas imports	1.7	1.8	1.7	1.8	1.6
Total American traffic with overseas countries	1.3	1.3	1.4	1.5	1.4

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

low in 1979 (5.4%) and peaked in 1982 (8.3%). The diversion rate for imports via the United States remained stable in 1979-1982, at approximately 25%. In other words, one-quarter of Canadian overseas imports were routed via the United States.

The diversion rate of American overseas trade via Canada from 1978 to 1982 hovered between 1.3% and 1.5%. The diversion rate of American imports wavered between 1.6% and 1.8%. Lastly, the diversion rate of American exports was slightly lower and, during the same period, varied from 0.9% to 1.3%.

5.6 Overseas Routing of Diverted Canadian Traffic Via the United States

This section provides a brief view of the trade areas of origin and destination affecting the development of Canadian traffic via the United States from 1978 to 1982 (see Appendix H)[4].

During the five-year period studied, Canadian overseas exports via the United States to Asian countries were characterized by a significant increase in the value of diverted traffic. In 1978, the value of this diversion represented more than one-third of all Canadian diversions via the United States. In 1982, exports to these destinations accounted for almost one-half of Canadian exports diverted via the United States. Moreover, growth in diverted traffic via the United States was also evident, from 1978 to 1982, for areas in (1) the Persian Gulf and Red Sea, (2) Belgium and the Netherlands, (3) the Mediterranean and (4) the West Coast of South America.

Diverted import traffic via the United States (Appendix H) and originating in Asian and Indonesian countries increased significantly. These imports consistently represented a major portion of all Canadian import traffic diverted via the United States (approximately 80%). Canada's situation with respect to diversions originating in African countries (particularly since 1981) and South America (West Coast), worsened significantly. Moreover, from 1978 to 1982, increases in the value of imports diverted via the United States were particularly noticeable for traffic originating on the North and West Coasts of France, the North Coast of West Germany, and in Mediterranean countries.

FOOTNOTES

[1] Data enabling a differentiation to be made between East and West Coast traffic were not available for 1978.

[2] See definitions of East and West Coasts, Appendix A.

[3] Data on Canadian diversion were converted into 1978 constant dollars using the price index for Canadian imports and exports supplied by the External Trade Division of Statistics Canada. American diversion data were converted into 1978 constant dollars from price and quantitative data on American exports and imports contained in "Statistical Abstract of the U.S. - 1984" (quoted in the methodology chapter). The value of the exchange rates between Canadian and American dollars was obtained from "International Financial Statistics - Supplement on Exchange Rates" published by the International Monetary Fund.

[4] Tables showing trends, by areas of origin and destination, in Canadian traffic via the United States in constant Canadian dollars are contained in Appendix H.

Chapter 6

GENERAL OVERVIEW OF CANADIAN TRAFFIC VIA THE UNITED STATES AND AMERICAN TRAFFIC VIA CANADA -- 1982

This chapter presents the overall scope and routing of Canadian overseas cargo traffic via the United States and American traffic via Canada in the specific year 1982, and then compares these two traffic flows and determines the relative importance of diversion for Canada and the United States in that same year.

6.1 Canadian Traffic Via the United States and American Traffic Via Canada

6.1.1 Canadian Traffic Via the United States

In 1982, commodities originating in or destined for Canada and registered by American ports represented traffic worth in excess of $6 billion U.S., or 16% of the total value of Canadian overseas exports and imports (diversion rate)[1].

There was an imbalance between export and import traffic (Table 6.1). Canadian imports via the United States ($4.2 billion) represented more than 70% of the total value of diverted traffic, whereas exports via the United States ($1.8 billion) accounted for slightly less than 30% of the total. Consequently, the diversion rate for imports was much higher than that for exports. Canadian imports routed via the United States represented 26.5% of the total value of Canadian overseas imports whereas Canadian exports shipped via American ports represented only 8.3% of the total value of Canadian overseas exports (Table 6.1, last column).

In addition, there was an imbalance between the flow of Canadian traffic via the East and West Coasts of the United States. American Pacific ports captured almost three-quarters of the total value of Canadian traffic via the United States, whereas American Atlantic ports captured a little over one-quarter. Moreover, slightly more than 90% of the value of Canadian imports via the United States was routed through American West Coast ports as opposed to almost two-thirds of the value of Canadian exports via American East coast ports. Thus, Canadian traffic registered by American East Coast ports consisted mainly of Canadian exports, whereas those registered by American West Coast ports consisted largely of Canadian imports. In general, the most significant flow was that of Canadian imports via American Pacific ports ($3.8 billion) followed by Canadian exports via American Atlantic ports ($1.2 billion).

Asian countries were the origin and destination of a high percentage of Canadian traffic routed via American ports.

Table 6.1

CANADIAN TRAFFIC VIA THE UNITED STATES AND AMERICAN TRAFFIC VIA CANADA
1982

(in millions of U.S. dollars and in percentages)

	East Coast		West Coast		Total		Percentage East-West Share		
	Value	Percentage	Value	Percentage	Value	Percentage	East	West	Diversion Rate
Canadian traffic via the U.S.									
Exports (1)	1 177.4	74.0	614.1	13.8	1 791.5	29.7	65.7	34.3	8.3
Imports (2)	413.5	26.0	3 832.0	86.2	4 245.5	70.3	9.7	90.3	26.5
Total (3)	1 590.9	100.0	4 446.1	100.0	6 037.0	100.0	26.4	73.6	16.0
American traffic via Canada									
Exports (4)	1 759.7	46.8	209.8	63.5	1 969.4	48.2	89.3	10.7	1.2
Imports (5)	1 997.6	53.2	120.6	36.5	2 118.2	51.8	94.3	5.7	1.6
Total (6)	3 757.3	100.0	330.4	100.0	4 087.6	100.0	91.9	8.1	1.4
Exports balance (4) - (1)	+ 582.3		- 404.3		+ 177.9				
Imports balance (5) - (2)	+1 584.1		-3 711.4		-2 127.3				
Total balance	+2 166.4		-4 115.7		-1 949.4				

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Almost half the value of Canadian exports via the United States was destined for Asian countries and almost 80% of Canadian imports via the United States originated in Asian countries. Two other important geographic areas were Western Europe (13% of the value of exports and 10% of imports via the United States), as well as the South and Central America/Caribbean area (over 18% of the value of exports via the United States), (see Table 6.2).

6.1.2 American Traffic Via Canada

In 1982, almost $4.1 billion in American exports and imports destined for or originating in overseas countries were routed via Canada. Nonetheless, this traffic represented only approximately 1.4% of the total value of American foreign trade with overseas countries[2]. Export and import traffic was balanced at 48% and 52%, respectively. American exports via Canada represented only 1.2% of the total value of American exports. The bulk of American overseas imports via Canada as a portion of total American imports was just as marginal, at 1.6%.

Nine-tenths of the value of both American export and import traffic via Canada was routed through Eastern Canada (Table 6.1). Almost 90% of American exports via Canada and approximately 95% of American imports via Canada were routed via Eastern Canada.

Less than one-tenth of the total value of American traffic via Canada was routed through Western Canada, two-thirds of which consisted of American exports.

Overseas American traffic via Canada was heavily concentrated in Western European countries. Both for exports and imports, almost 80% of the value of American traffic via Canada was generated by trade with Western Europe (Table 6.2). Nonetheless, a substantial portion of American exports via Canada was destined for Eastern European countries (over 13%). Asia was the second most important area of origin for imports (almost 10% of American imports via Canada)[3].

6.2 Comparison of Canadian Traffic Via the United States with American Traffic Via Canada in 1982

6.2.1 Overall Comparison

In 1982, the total value of Canadian traffic via the United States was higher than that of American traffic via Canada: $6 billion in Canadian overseas exports and imports were transported via the United States compared to $4.1 billion in American overseas exports and imports via Canada, a difference of $2 billion. This traffic total, presented in Table 6.1, shows a negative balance, signifying that the difference between the value of the two traffic flows was "unfavourable" to Canada and that a greater amount of Canadian traffic was routed through the

Table 6.2

ROUTING OF CANADIAN TRAFFIC VIA THE UNITED STATES
AND AMERICAN TRAFFIC VIA CANADA
1982

(in percentages)

Trade Areas of Destination and Origin	Canadian Traffic Via the United States			American Traffic Via Canada		
	Exports	Imports	Total	Exports	Imports	Total
Western Europe	12.8	9.8	10.7	79.4	80.8	80.1
Eastern Europe	NS	NS	NS	13.2	2.4	7.6
Middle East	11.5	0.1	3.5	0.6	0.2	0.4
Africa	2.9	6.6	5.5	1.0	3.5	2.3
Asia	49.6	79.0	70.2	4.0	10.1	7.1
Oceania	4.8	0.7	1.9	1.1	1.2	1.2
South America	10.9	2.4	4.9	0.5	0.9	0.7
Central America/Caribbean	7.5	1.3	3.2	0.1	0.6	0.3
Other	NS	0.1	NS	NS	0.2	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

United States than American traffic through Canada. This difference can also be expressed in the following manner: for every dollar of Canadian exports or imports via the United States, there was only 68 cents worth of American exports or imports via Canada.

However, the situation is very different if exports and imports are examined separately. With regard to exports, the balance was in Canada's favour. However, the advantage was only slight, amounting to only $178 million or 10% more American exports via Canada than Canadian exports via the United States. Conversely, the balance for imports was highly "unfavourable" to Canada, with Canadian imports via the United States twice that of American imports via Canada.

A comparison of Canada's diversion rate with that of the United States reveals an important point. Canadian overseas traffic routed via the United States represented a considerable portion of total Canadian overseas trade (16% of total value). However, American traffic via Canada represented only a small portion of total U.S. overseas trade (1.4%).

Canadian imports via the United States represented more than one-quarter of all Canadian overseas imports, whereas American imports via Canada amounted to only 1.6% of all American overseas imports. The difference is not as noticeable for exports, since 8.3% of the total value of Canadian overseas exports was routed through the United States as opposed to 1.2% of the total value of American overseas exports routed through Canada.

6.2.2 Comparison of Flows Diverted in the East and West

In the East, the balance of traffic was in Canada's favour (Table 6.1). American traffic via Eastern Canada was greater by $2 billion than Canadian traffic via the Eastern United States[4]. More specifically, the value of American overseas imports via Eastern Canada was almost five times greater than Canadian imports via Eastern American ports, resulting in a $1.6 billion balance in favour of Canada. The value of American exports via the East Coast of Canada was only 1.5 times greater than Canadian exports via the United States, for a balance of $582 million in Canada's favour.

In the West, the situation was just the reverse. The value of Canadian traffic via the Western United States was 13 times greater than American traffic via the Canadian West Coast. Canada generated traffic passing through in Western American ports was valued at over $4.4 billion, whereas the United States routed little more than $330 million in exports and imports via Western Canada. The explanation of the discrepancy between the two traffic valves has to be found in the high importance of Canadian import trade through the American Western

ports. Canadian imports via the Western United States were 32 times greater than American imports via Western Canada. Likewise, Canadian exports via American West Coast ports were almost three times greater than those of the United States via Canadian West Coast ports ($614 million compared to $210 million).

6.2.3 Comparison of Diverted Commodity Flows by Trade Area of Origin and Destination

The purpose of this section is to study the balance between Canadian traffic via the United States and American traffic via Canada for the same overseas trade areas of origin or destination. In general, Canadian traffic via the United States was greater in value than American traffic via Canada, with exceptions of two overseas trade areas of origin and destination, Western and Eastern Europe (Table 6.3)[5]. American traffic via Canada originating in or destined for Western European countries was greater by $2.6 billion than Canadian traffic via the United States originating in or destined for Western Europe. The difference for Eastern European countries was $310 million[6].

It thus appears that, although Canada "benefits" in terms of diverted American traffic with these two European areas, the benefits are largely cancelled out by extensive flows of Canadian traffic diverted via the United States for trade with other areas. The $3 billion in American traffic via Canada with Western Europe ($2.6 billion) and Eastern Europe ($0.3 billion) resulted in a "net benefit" in traffic for Canada, but did not compensate for Canadian traffic with all other trade areas of origin or destination. Diverted Canadian traffic with these countries totalled $4.9 billion more than American traffic via Canada. Taken as a whole, Canada had $1.9 billion less in diverted trade than the United States.

The most significant Canadian deficit involved trade with Asian countries: Canadian traffic with Asia diverted via the United States was 14 times greater than American traffic with Asia diverted via Canada. Eighty per cent of this diverted trade imbalance was due to the extensive use of routings via the United States for Asian commodities imported by Canada.

Canada's deficit in terms of balance between Canadian and American diversions for the trade areas (Middle East, Oceania, South America, Central America/Caribbean) was primarily caused by the large quantity of Canadian exports to these areas via the United States (Table 6.3). However, additional Canadian traffic via the United States for trade with Africa was largely due to Canadian imports via the United States from this area.

Table 6.3

BALANCE OF CANADIAN AND AMERICAN DIVERTED TRAFFIC,
BY TRADE AREA
1982

(in millions of U.S. dollars)

Trade Areas of Destination and Origin	Canadian Traffic Via the United States			American Traffic Via Canada			Balance		
	Exports (1)	Imports (2)	Total (3)	Exports (4)	Imports (5)	Total (6)	Exports (4)-(1)	Imports (5)-(2)	Total (6)-(3)
Western Europe	229.0	416.7	645.7	1 564.5	1 711.0	3 275.5	+1 335.5	+1 294.3	+2 629.8
Eastern Europe	0.5	0.9	1.4	260.3	50.7	311.0	+ 259.8	+ 49.8	+ 309.6
Middle East	206.2	2.2	208.4	12.2	4.7	16.9	- 194.0	+ 2.5	- 191.5
Africa	52.9	280.8	333.7	20.7	74.6	95.3	- 32.2	- 206.2	- 238.4
Asia	888.4	3 354.8	4 243.2	78.6	213.6	292.2	- 809.8	-3 141.2	-3 951.0
Oceania	85.6	27.9	113.5	21.3	26.3	47.6	- 64.3	- 1.6	- 65.9
South America	194.5	103.2	297.7	9.6	20.1	29.7	- 184.9	- 83.1	- 268.0
Central America/Caribbean	134.1	56.9	191.0	1.7	12.4	14.1	- 132.4	- 44.5	- 176.9
Other	0.3	2.1	2.4	0.4	4.8	5.2	+ 0.1	+ 2.7	+ 2.8
Total	1 791.5	4 245.5	6 037.0	1 969.4	2 118.2	4 087.6	+ 177.9	-2 127.3	-1 949.4

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

FOOTNOTES

[1] All accounted modes of transport.

[2] All accounted modes of transport.

[3] USSR included.

[4] See definitions of East and West Coasts, Appendix A.

[5] American traffic via Canada with Saint-Pierre-et-Miquelon and Greenland are higher than Canadian traffic via the United States for the same "regions". However, such traffic is very limited and is not analysed.

[6] USSR included (see list of countries in Appendix E).

Chapter 7

DIVERSION OF CANADIAN OVERSEAS TRADE VIA THE UNITED STATES

This chapter provides a detailed description of Canadian overseas imports and exports routed via the United States in 1982. The emphasis has been placed on American ports of loading and unloading, origin and final destination, and types of commodities.

7.1 Canadian Overseas Exports Via the United States

7.1.1 American Ports of Loading

As noted earlier, almost two-thirds of the total value of Canadian overseas exports via the United States in 1982 were loaded in East Coast American ports, of which New York was the principal port of exit[1]. Almost two-thirds of the value of Canadian overseas exports via East Coast ports was shipped from New York (Table 7.1).

One-third of the total value of Canadian exports via the United States was shipped via American ports on the Pacific seaboard. Seattle was the principal West Coast port of loading, having shipped almost 80% of the total value of Canadian exports routed via American Pacific ports.

The flow of Canadian exports via the United States was therefore heavily concentrated in two principal ports. New York was foremost, receiving 40% of the total value of all Canadian exports via the United States. Seattle was the second, receiving more than one-quarter of the total (Table 7.1).

However, almost one-third of the value of Canadian exports via the United States was shipped from numerous other ports. On the East Coast, three northern Atlantic ports (Baltimore, Philadelphia and Norfolk) collectively shipped almost 9% of Canadian exports via the United States. Moreover, three southern Atlantic ports (Miami, West Palm Beach and Charleston) and three Gulf ports (Houston, New Orleans and St. Rose) together shipped almost 14% of Canadian exports via the United States. In the West, Oakland and Long Beach, California, shipped almost 3% of Canadian exports diverted via the United States. Lastly, Skagway in Alaska shipped almost 2% of Canadian exports diverted via the United States in 1982[2].

7.1.2 Traffic Destinations

Almost one-half of the value of Canadian exports shipped via the United States was destined for Asian countries (Table 7.2). Apart from Asian destinations, Canadian exports via

Table 7.1

MAJOR AMERICAN PORTS OF LOADING FOR CANADIAN OVERSEAS EXPORTS SHIPPED VIA THE UNITED STATES
1982
(in millions of U.S. dollars, and in thousands of metric tonnes)

	Value				Tonnage			
Ports	Value	% Total	Rank	% Bulk*	Weight	% Total	Rank	% Bulk*
East								
New York, New York	742.0	41.4	1	0.9	236.1	28.9	1	2.6
Baltimore, Maryland	79.9	4.5	3	0.1	28.9	3.5	5	0.9
Miami, Florida	75.6	4.2	4	3.3	30.1	3.7	4	9.6
Philadelphia, Pennsylvania	54.1	3.0	5	0.2	13.2	1.6	10	2.1
Houston, Texas	53.7	3.0	6	0.0	24.9	3.1	6	0.0
New Orleans, Louisiana	44.8	2.5	7	0.7	14.2	1.7	9	1.3
West Palm Beach, Florida	34.6	1.9	10	5.5	15.0	1.8	8	15.8
Charleston, South Carolina	23.9	1.3	11	0.0	2.9	0.4	13	0.0
Norfolk, Virginia	20.9	1.2	12	0.0	10.3	1.3	11	0.0
St. Rose, Louisiana	18.4	1.0	13	0.0	5.4	0.7	12	0.0
Other ports	29.5	1.6			15.2	1.9		
Eastern Total	1 177.4	65.7		1.0	396.1	48.5		3.1
West								
Seattle, Washington	489.6	27.3	2	8.5	177.3	21.7	3	14.6
Skagway, Alaska	40.5	2.3	8	100.0	202.7	24.8	2	100.0
Oakland, California	34.8	1.9	9	4.6	15.9	2.0	7	14.3
Long Beach, California	16.6	0.9	14	10.8	2.5	0.3	14	4.0
Other ports	32.6	1.8			21.4	2.6		
Western Total	614.1	34.3		14.3	419.7	51.5		28.8
Grand Total	1 791.5	100.0			815.7	100.0		

*Indicates percentage of commodities usually loaded in bulk.

Note: Due to rounding, the sum of the components may not correspond exactly to the totals.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 7.2

DESTINATION OF CANADIAN OVERSEAS EXPORTS
SHIPPED VIA THE UNITED STATES
1982
(in millions of U.S. dollars)

Trade Area of Destination	Value	% Total
Western Europe	229.0	12.78
Eastern Europe	0.5	0.03
Middle East	206.2	11.51
Africa	52.9	2.95
Asia	888.4	49.59
Oceania	85.6	4.78
South America	194.5	10.85
Central America/Caribbean	134.1	7.49
Others*	0.3	0.02
Total	1 791.5	100.00

*Saint-Pierre-et-Miquelon, Greenland.

Note: Due to rounding, the sum of the components may not correspond exactly to the totals.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

American ports were primarily shipped to three major trade areas: Central America/Caribbean and South America (over 18%), Western Europe (13%) and the Middle East (11.5%).

Table 7.3 shows the principal countries of destination. Over 20% of all Canadian exports via the United States were destined for Japan, the foremost country of destination for diverted Canadian exports. The nine Asian countries[3] appearing in Table 7.3 were the destinations for practically all Canadian exports via the United States to Asia. It should also be noted that over one-half of all exports via the United States to South America was destined for Venezuela. The Netherlands and the United Kingdom were the destinations for two-thirds of exports to Western Europe via the United States. More than one-half of Canadian exports to the Middle East via the United States was destined for Saudi Arabia and Libya.

In more general terms, the data reveal that almost one-half of the value of Canadian exports via the United States was shipped to six countries, a fairly limited number of destinations, three of which are located in Asia. The six principal countries were Japan, South Korea, Taiwan, Venezuela, Saudi Arabia and the Netherlands.

Still with reference to Table 7.3, exports destined for major countries in Western Europe, the Middle East, Central and South America were in large part shipped from ports on the East Coast of the United States. However, for some destinations, such as the United Kingdom and France, a substantial portion of shipments via the United States took place in American ports on the West Coast. However, Asia remained the principal destination of exports shipped by West Coast ports. Although exports to Asia were the main component of Canadian export traffic handled by West Coast American ports, it is also of note that, for several of these destinations, a significant portion was shipped by East Coast American ports. In fact, Canadian exports via the United States to Indonesia, Thailand, the Philippines, Singapore and Malaysia were primarily shipped by East Coast ports.

7.1.3 Commodities

Canadian exports shipped by American ports basically consisted of four major categories of merchandise, more or less equal in relative importance (Table 7.4). Machinery and transportation equipment (excluding automobiles) represented over 21% of the total, as did food products, beverages and tobacco. Semi-fabricated products accounted for almost 20% of Canadian exports shipped via American ports, and inedible crude materials for more than 17%.

Table 7.4 also shows, by major commodity group[4], the distribution of commodities by trade area of destination. Apart from food products and inedible crude materials primarily

Table 7.3

MAJOR COUNTRIES OF DESTINATION FOR CANADIAN OVERSEAS EXPORTS SHIPPED VIA THE UNITED STATES
1982

(in millions of U.S. dollars)

Country of Destination	Value	% of Total	Percentage Distribution by Coastal District	
			East	West
Japan	351.1	19.60	35.6	64.4
South Korea	168.3	9.40	7.4	92.6
Venezuela	105.4	5.88	98.8	1.2
Saudi Arabia	95.6	5.34	95.9	4.1
Netherlands	91.5	5.11	97.6	2.4
Taiwan	82.1	4.58	21.4	78.6
Australia	64.9	3.62	82.8	17.2
United Kingdom	62.2	3.47	75.0	25.0
Indonesia	56.2	3.14	93.3	6.7
Hong Kong	51.9	2.90	46.5	53.5
Thailand	49.4	2.76	83.6	16.4
Philippines	38.5	2.15	76.9	23.1
Singapore	38.4	2.14	60.7	39.3
Malaysia	28.4	1.58	82.0	18.0
Libya	22.6	1.26	100.0	0.0
Trinidad/Tobago	22.0	1.22	100.0	0.0
Ecuador	21.3	1.19	96.5	3.5
France	20.7	1.16	39.9	60.1
Bahamas	19.2	1.07	100.0	0.0
Other countries	401.8	22.43	87.2	12.8
Total	1 791.5	100.0	65.7	34.3

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 7.4

MAJOR GROUPS OF CANADIAN OVERSEAS EXPORTS
ROUTED VIA THE UNITED STATES
1982

	Major Commodity Groups	Destinations						Total Value			Registering Districts (Ports) in the U.S.	
		Asia	Western Europe	Middle East	South America	Central America/ Caribbean	Other Destinations	%	Millions U.S. Dollars	% Total	East	West
0	Food	70.9	12.7	1.5	3.2	9.2	2.5	100	368.3	20.6	58.9	41.1
1	Beverages and Tobacco	50.3	26.0	1.6	0.1	17.7	4.3	100	13.7	0.8	82.1	17.9
2	Inedible Crude Materials	88.1	5.4	0.6	2.4	0.8	2.7	100	310.0	17.3	25.2	74.8
3	Fossils, Fuels, Lubricants and Related Products	48.4	11.3	8.6	2.0	13.5	16.2	100	1.7	0.1	45.2	54.8
4	Oils and Greases	24.2	15.5	0.0	44.0	16.4	0.0	100	0.7	NS	76.4	23.6
5	Chemical and Related Products	47.0	11.9	14.0	14.1	7.4	5.6	100	165.4	9.2	77.8	22.2
6	Fabricated Products (semi-end)	28.7	25.3	15.1	11.0	10.8	9.1	100	353.8	19.7	84.9	15.1
7	Machinery and Transportation Equipment*	33.6	11.1	25.5	12.0	7.5	10.3	100	381.4	21.3	71.8	28.2
78	Automobiles	11.7	3.7	9.5	48.2	2.7	24.2	100	130.2	7.3	89.7	10.3
8	Miscellaneous End Products	34.7	7.4	18.9	6.1	19.3	13.6	100	63.7	3.6	74.9	25.1
9	Others	57.7	27.4	10.6	0.4	3.4	0.5	100	2.4	0.1	99.6	0.4
	Total	49.6	12.8	11.5	10.9	7.5	7.7	100	1 791.5	100.0	65.7	34.3

*Excluding Automobiles

Notes: NS = not significant.
Due to rounding, the sum of the components may not correspond exactly to the totals.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

destined for Asian countries, there was no concentrated flow of commodities to any specific destination area. The breakdown of Canadian exports via the United States to their principal destination (Appendices G1 and G4) does, however, enable us to identify certain exceptions; for example, more than 98% of pulp and paper waste exported via the United States is destined for Asia.

Overall, Canadian exports via the United States had a high unit value (preponderance of major groups 0, 5, 6, 7). As shown in Table 7.5, over 90% of the total value of such exports are shipped overseas by liner services. The only significant Canadian exports via the United States sent by tramp services were Canadian bulk exports via Skagway in Alaska, consisting of ferrous metals destined for Asia.

7.2 Canadian Overseas Imports Via the United States

7.2.1 American Ports of Unloading

In 1982, over 90% of Canadian imports via the United States were unloaded in West Coast ports. Seattle was by far the major port of unloading, receiving more than three-quarters of Canadian imports via the Western United States. Less than 10% of all Canadian imports via the United States were unloaded in East Coast ports. New York was the principal unloading port for almost 70% of Canadian overseas imports via the Eastern United States.

The flow of imports via the United States is thus heavily concentrated in the port of Seattle (Table 7.6). It receives almost 70% of the total value of Canadian imports. A neighbouring port, Tacoma, holds second place with almost 9% of the total value. In third place is another West Coast port (Oakland, California), which unloads 7% of the total value of Canadian imports via the United States.

Despite the major role New York plays among East Coast American ports in unloading Canadian imports, it receives only 7% of the total value, almost ten times less than the port of Seattle. Other East Coast ports collectively unload somewhat less than 3% of the total value of Canadian imports via the United States.

In terms of tonnage imported by Canada via the United States, Table 7.6 shows that the total tonnage imported via East Coast American ports is slightly higher than that via West Coast ports. This finding can be explained by the particular nature of Canadian imports unloaded in Portland. Excluding petroleum products, Portland received $52 million in Canadian imports with an extremely high tonnage of 247 thousand tonnes[5]. These imports consisted of chemical products[6] which, although not classified as bulk products, nonetheless had an average per tonne value

Table 7.5

CANADIAN OVERSEAS EXPORTS SHIPPED VIA THE UNITED STATES
BY TYPE OF SHIPPING SERVICE AND AMERICAN PORT REGION
1982

(in millions of U.S. dollars, and in thousands of metric tonnes)

Area	Liner Shipping		Tramp Ships		Oil Tankers		Total	
	Value	Tonnage	Value	Tonnage	Value	Tonnage	Value	Tonnage
East								
North Atlantic	872.1	282.5	32.3	11.0	1.5	0.5	905.9	293.9
South Atlantic	102.3	35.1	36.1	15.2	0.0	0.0	138.5	50.3
Gulf	97.3	31.8	5.8	3.3	29.4	16.6	132.5	51.8
Great Lakes	0.3	0.1	0.1	NS	0.0	0.0	0.5	0.2
Total East	1 072.1	349.6	74.4	29.4	30.9	17.1	1 177.4	396.1
West								
North Pacific	508.6	190.6	47.5	209.1	0.1	0.4	556.3	400.2
South Pacific	51.3	18.3	6.6	1.1	0.0	0.0	57.9	19.5
Total West	559.9	208.9	54.1	210.2	0.1	0.4	614.1	419.7
Total	1 631.9	558.6	128.5	239.6	31.0	17.5	1 791.5	815.7

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 7.6

PRINCIPAL AMERICAN PORTS UNLOADING CANADIAN IMPORTS
ROUTED VIA THE UNITED STATES
1982

(in millions of U.S. dollars, and in thousands of metric tonnes)

Ports	Value				Tonnage			
	Value	% Total General	Rank	% Bulk**	Weight	% Total General	Rank	% Bulk**
East								
New York, New York	296.7	7.0	4	0.5	101.3	13.1	3	0.6
Portland*, Maine	52.4	1.2	7	0.0	247.0	32.0	2	0.0
Philadelphia, Pennsylvania	22.6	0.5	8	0.0	18.2	2.4	6	0.0
Gloucester, New Jersey	12.9	0.3	10	0.0	10.3	1.3	8	0.0
Houston, Texas	8.3	0.2	11	0.0	1.8	0.2	13	0.0
New Bedford, Massachusetts	8.1	0.2	12	1.0	6.2	0.8	11	0.0
Camden, New Jersey	5.7	0.1	14	0.0	10.5	1.4	7	0.0
Other ports	7.5	0.2	-	-	3.3	0.4	-	-
Total East	414.2	9.7			398.7	51.7		
West								
Seattle, Washington	2 925.8	68.9	1	0.6	275.1	35.7	1	0.5
Tacoma, Washington	375.1	8.8	2	27.2	50.5	6.6	4	32.5
Oakland, California	319.7	7.5	3	0.3	23.3	3.0	5	0.3
San Francisco, California	102.2	2.4	5	0.1	9.4	1.2	9	0.4
Los Angeles, California	85.2	2.0	6	1.2	8.8	1.1	10	1.7
Long Beach, California	16.1	0.4	9	0.8	3.4	0.4	12	1.2
Bellingham, Washington	5.9	0.1	13	0.0	0.5	0.1	14	0.0
Other ports	2.0	NS	-	-	1.1	0.1	-	-
Total West	3 832.0	90.3			372.0	48.3		
Total	4 246.2	100.0			770.7	100.0		
Portland/bulk (petroleum products)	1 298.8				4 890.8			
Overall total	5 545.0				5 661.7			

* Excluding petroleum products.

Notes:
** Indicates percentage of commodities usually considered as loaded in bulk at each port.

NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

comparable to bulk products (almost $212/tonne). Thus, if we exclude this particular type of import commodities unloaded at Portland from the total received by Eastern American ports, we see that Eastern ports received a little over 152 thousand tonnes, or less than 29% of total Canadian import tonnage (523 thousand tonnes) unloaded in the United States.

By calculating the average value per tonne of imports received by Western and Eastern American ports, we are able to determine another characteristic of such traffic. The average value per tonne of Canadian imports via Western ports was more than four times greater than that via Eastern American ports. In fact, the average was $8 924 per tonne in the West compared to $2 380 per tonne in the East (excluding Portland). Apart from the sizeable difference between the amount of traffic in the West and that in the East, there was also a marked difference in the nature of such traffic (see Section 7.2.3).

7.2.2 Origin of Traffic

The major portion of Canadian imports via American ports originated in Asia (almost 80% of the total value of Canadian imports via the United States) (Table 7.7). Western Europe was the second major country bloc of origin with slightly less than 10% of the total value of imports, Africa was third (less than 7%) followed by Central America/Caribbean and South America (less than 4%). Table 7.8 lists the major countries of origin for Canadian imports via the United States. The importance of Asia is particularly due to Japan, the country of origin for over 40% of the total value of Canadian imports via American ports. Four other Asian countries (Hong Kong, Taiwan, South Korea and China) are the origin of more than one-third of Canadian imports via American ports. In fact, the seven Asian countries listed in Table 7.8 were the origin for almost all (98.5%) Canadian imports from Asia via American ports. Five Western European countries (France, West Germany, Italy, Spain, and the United Kingdom) were the origin of somewhat less than 8% of the value of Canadian imports via the United States but of almost 90% of the value of Canadian imports from Western Europe.

Canadian imports from Asia, via the United States, were almost entirely unloaded in American Pacific ports, especially imports originating in Japan, Hong Kong, Taiwan, South Korea and China. Moreover, the majority of imports via the United States from France, West Germany and the United Kingdom were received by Pacific Coast American ports[7].

7.2.3 Commodities

Over one-quarter of the value of Canadian imports via American ports consisted of semi-fabricated products. Another quarter consisted of sundry end products. Food, beverages and tobacco accounted for more than 20% of the total value of these imports. Lastly, machinery and transportation equipment

Table 7.7

ORIGINS OF CANADIAN OVERSEAS IMPORTS
VIA THE UNITED STATES
1982

(in millions of U.S. dollars)

Trade Area of Origin	Value	% of Total
Western Europe	416.7	9.82
Eastern Europe	0.9	0.02
Middle East	2.2	0.05
Africa	280.8	6.61
Asia	3 354.8	79.02
Oceania	27.9	0.66
South America	103.2	2.43
Central America/Caribbean	56.9	1.34
Others*	2.8	0.05
Total	4 246.2	100.0

* Saint-Pierre-et-Miquelon, Greenland.

Note: Petroleum products have been excluded.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 7.8

MAJOR COUNTRIES OF ORIGIN FOR CANADIAN OVERSEAS IMPORTS
VIA AMERICAN PORTS
1982

(in millions of U.S. dollars)

Country of Origin	Value*	% of Total	Percentage Distribution by Coastal District	
			East	West
Japan	1 726.7	40.67	1.8	98.2
Hong Kong	517.9	12.20	0.8	99.2
Taiwan	500.4	11.79	1.4	98.6
South Korea	327.3	7.71	0.5	99.5
China	117.1	2.76	1.4	98.6
France	100.6	2.37	25.5	74.5
West Germany	86.8	2.04	43.0	57.0
Singapore	82.0	1.93	13.3	86.7
Italy	65.4	1.54	91.5	8.5
Spain	49.1	1.16	96.3	3.7
Great Britain	35.9	0.85	12.5	87.5
Philippines	33.1	0.78	24.8	75.2
Netherlands	32.5	0.77	63.9	36.1
Peru	31.4	0.74	0.7	99.3
Trinidad and Tobago	22.2	0.52	100.0	0.0
Venezuela	21.7	0.51	100.0	0.0
Other countries	496.1	11.66	22.1	77.9
Total	4 246.2	100.0	9.7	90.3

*Petroleum products excluded.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

(including automobiles) represented almost 20% of Canadian imports via U.S. ports.

Food, beverages and tobacco, and chemical products were the only groups of Canadian imports of which the share received by American ports was relatively significant. In fact, one-fifth of the value of diverted food, beverage and tobacco imports and slightly over one-third of diverted chemical product imports via the United States were unloaded in East Coast American ports.

For all other major groups of products imported into Canada via the United States, the principal zone of origin was Asia (Table 7.9). The notable exception was beverages and tobacco, which originated almost entirely in Western Europe (see Appendix G6), and inedible crude materials, primarily in Africa.

In general, Canadian overseas imports via the United States consisted of commodities with a very high unit value, principally originating in Asia and unloaded in large part on the Pacific coast (Seattle-Tacoma). The breakdown by commodity of Canadian imports via the United States from Asia supports the general picture of the nature of such traffic (Appendix G5). These imports consisted mainly of end products, automobiles and various types of machinery. The statement that Canadian imports via the United States are essentially general cargo with a high unit value is confirmed by the type of maritime services involved in transportation to American ports (Table 7.10).

In fact, 90% of Canadian overseas imports were transported to the United States by liner shipping services (8). The figures on Canadian overseas imports by liner shipping in Californian ports are significant: $515 million.

Lastly, despite the relatively limited importance, in dollar terms and in terms of diverted imports as a whole, of Canadian imports transported by tramp vessels to the United States, over $300 million in Canadian imports were transported in this manner to North Pacific ports (43 thousand tonnes). Such traffic had a particularly high average value per tonne ($6 987 per tonne). A breakdown of this traffic by composition and port of unloading showed that it basically concerned two types of commodities: certain metallic minerals and non-ferrous metals unloaded in large part at the port of Tacoma.

Table 7.9

DISTRIBUTION, BY MAJOR GROUPS OF COMMODITIES OF CANADIAN OVERSEAS IMPORTS DIVERTED VIA THE UNITED STATES
1982

	Major Commodity Groups	Principal Areas of Origin				Total Value			Location of U.S. Ports	
		Asia %	Western Europe %	Africa %	Other Origins %	%	U.S. $000 000	Total %	East	West
0	Food	75.3	12.9	2.9	8.9	100.0	680.7	16.0	22.3	77.7
1	Beverages and tobacco	3.2	91.3	0.5	5.0	100.0	222.7	5.2	21.0	79.0
2	Inedible crude materials	27.4	2.6	61.2	8.8	100.0	166.2	3.9	8.4	91.6
3	Fossils, fuels, lubricants and related products	NS	0.0	0.0	0.0		NS	NS	NS	NS
4	Oils and greases	10.8	88.3	0.0	0.9	100.0	4.1	0.1	5.9	94.1
5	Chemical and related products	63.2	6.5	0.4	29.9	100.0	177.6	4.2	36.2	63.8
6	Fabricated products (semi-end)	77.7	3.9	14.1	4.3	100.0	1 105.1	26.0	5.4	94.6
7	Machinery and transportation equipment	96.4	2.9	0.3	0.4	100.0	476.3	11.2	5.3	94.7
78	Automobiles	95.2	4.7	NS	0.1	100.0	356.3	8.4	4.7	95.3
8	Miscellaneous end products	96.5	3.1	NS	0.4	100.0	1 056.1	24.9	3.3	96.7
9	Others	81.7	0.0	0.0	18.3	100.0	1.0	NS	18.9	81.1
	Total	79.0	9.8	6.6	4.6	100.0	4 246.2	100.0	9.7	90.3
33	Petroleum products	NS	6.6	2.4	91.0*	100.0	1 299.5		100.0	0.0
	Grand Total	60.5	9.1	5.6	24.8	100.0	5 545.0		30.9	69.1

*This petroleum comes mainly from Venezuela, Mexico and the Caribbean.

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 7.10

CANADIAN OVERSEAS IMPORTS SHIPPED VIA THE UNITED STATES
BY TYPE OF SHIPPING SERVICE AND AMERICAN PORT REGION
1982

(in millions of U.S. dollars, and in thousands of metric tonnes)

Area	Liner Shipping		Tramp Ships		Oil Tankers*		Total	
	Value	Tonnage	Value	Tonnage	Value	Tonnage	Value	Tonnage
East								
North Atlantic	310.2	115.8	38.6	32.6	53.2	247.3	402.0	395.7
South Atlantic	0.6	0.2	0.2	0.1	0.0	0.0	0.9	0.3
Gulf	4.5	1.5	6.7	1.3	NS	NS	11.3	2.8
Great Lakes	NS	NS	NS	NS	0.0	0.0	NS	NS
Total East	315.3	117.5	45.6	33.9	53.2	247.3	414.2	398.7
West								
North Pacific	3 005.7	283.0	301.7	43.2	0.0	0.0	3 307.4	326.2
South Pacific	515.1	44.3	9.5	1.5	0.0	0.0	524.6	45.7
Total West	3 520.8	327.3	311.2	44.6	0.0	0.0	3 832.0	372.0
Grand Total	3 836.1	444.8	356.9	78.7	53.2	247.3	4 246.2	770.7

*Petroleum imports via Portland excluded.

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

FOOTNOTES

[1]The East Coast of the United States is defined in Appendix A.

[2]These exports ($40 million) are special in that they are 100% bulk, which explains the large tonnage registered by this port (202 thousand tonnes). This is the second largest tonnage; however, because of its nature, it cannot be compared to other findings since the portion of Canadian bulk commodities routed through other ports is very small.

[3]Japan, South Korea, Taiwan, Indonesia, Hong Kong, Thailand, the Philippines, Singapore and Malaysia.

[4]The major commodity groups are defined in Appendix B.

[5]This port receives 4.9 million tonnes of petroleum valued at $1.3 billion bound for Canada. This value and tonnage appear in Table 7.6, but should not be considered as diverted traffic.

[6]No. 59, Classification A: Miscellaneous Chemical Products, n.e.s.

[7]This phenomenon may appear surprising; however, it can be explained by the fact that diversion via the Eastern United States of commodities originating in these countries is low. Thus, the portion diverted via the West seems all the more significant. We should not conclude that European commodities are extensively diverted through Seattle. The vast majority of such traffic reaches Canada directly. Moreover, American traffic diverted via Canada is principally bound for or originating in Europe and, in 90% of cases, involves the ports of Eastern Canada.

[8]This calculation excludes the chemical products shipped by tanker to Portland (Maine), valued at $53 million for 246 thousand tonnes.

Chapter 8

DIVERSION OF AMERICAN OVERSEAS TRADE VIA CANADA

This chapter discusses the characteristics of American overseas trade via Canada in 1982, in terms of both imports and exports. It deals with the points of entry and exit of such traffic, its overseas origins and destinations, and the type of commodities involved.

8.1 American Overseas Exports Via Canada

8.1.1 Customs Districts

The previous chapter discussed American ports of loading and unloading for Canadian traffic routed via the United States. Because of the nature of the data, it is impossible, in this section, to discuss in a similar way the Canadian ports of loading and unloading for American traffic routed via Canada. This restriction (explained in Chapter 3) requires instead that data be presented in terms of American customs districts. For exports, the customs district corresponds to the U.S. point of exit for overseas traffic via Canada or, in other words, the American customs office where exports are cleared before entering Canada. Thus, the purpose of this section is to present the points of passage into Canada of diverted American exports.

In 1982, almost two-thirds of the value of American overseas exports via Canada were cleared by the customs district of Detroit, Michigan (Table 8.1). The Detroit district's predominance as the foremost "port of entry" into Canada is not a recent occurrence. From 1976 to 1980, Detroit consistently placed first in this respect[1]. The Ogdensburg (New York) district, with customs offices on the borders of Ontario and Quebec, was second in importance, with 13% of the value of American overseas exports via Canada. The four other eastern districts collectively processed 12% of the total value of American overseas exports via Canada. The greatest part of this traffic entered Canada via Ontario.

Only 10% of the value of American exports via Canada was cleared in the West, primarily in the Seattle (Washington) district on the British Columbia border.

8.1.2 Traffic Destinations

Table 8.2 summarizes the distribution of American overseas exports via Canada by nine destination trade areas. Almost 80% of these exports were bound for Western European countries[2]. Eastern Europe, by contrast, was the second major

Table 8.1

CUSTOMS DISTRICTS AND OVERSEAS DESTINATIONS FOR AMERICAN EXPORTS ROUTED VIA CANADA
1982
(in millions of U.S. dollars)

Customs Districts	Western Europe			Eastern Europe			Asia			Other Dests.			Total Value		
	in Value	in % Dist.	in % Dest.	in Value	in % Dist.	in % Dest	in Value	in % Dist.	in % Dest.	in Value	in % Dist.	in % Dest.	in Value	in % Dist.	in % Dest.
East															
Detroit, Michigan	1 108.2	70.8	87.3	131.7	50.6	10.4	7.0	8.9	0.5	22.5	34.1	1.8	1 269.4	64.5	100
Ogdensburg, New York	193.3	12.4	75.6	45.4	17.4	17.8	4.9	6.2	1.9	12.0	18.2	4.7	255.6	13.0	100
Buffalo, New York	73.9	4.7	65.9	16.8	6.5	15.0	9.2	11.7	8.2	12.2	18.5	10.9	112.1	5.7	100
St. Albans, Vermont	80.0	5.1	93.0	2.5	1.0	2.9	2.0	2.5	2.3	1.5	2.3	1.7	86.0	4.4	100
Portland, Maine	6.5	0.4	27.3	1.7	0.6	7.1	13.0	16.5	54.6	2.6	3.9	10.9	23.8	1.2	100
Duluth, Minnesota	0.0	0.0	0.0	12.8	4.9	100.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.6	100
Total East	1 461.9	93.4	83.1	211.0	81.0	12.0	36.1	45.9	2.0	50.7	76.8	2.9	1 759.7	89.4	100
West															
Seattle, Washington	87.0	5.6	47.7	47.2	18.1	25.9	38.3	48.7	21.0	9.9	15.0	5.4	182.4	9.2	100
Pembina, North Dakota	14.3	0.9	56.7	2.1	0.8	8.3	4.2	5.3	16.7	4.6	7.0	18.3	25.2	1.3	100
Great Falls, Montana	1.3	0.1	61.9	0.0	0.0	0.0	NS	NS	NS	0.8	1.2	38.1	2.1	0.1	100
Total West	102.5	6.6	48.9	49.4	18.9	23.5	42.5	54.1	20.3	15.4	23.3	7.3	209.8	10.6	100
Grand Total	1 564.5	100.0	79.4	260.3	100.0	13.2	78.6	100.0	4.0	66.0	100.0	3.3	1 969.4	100.0	100.0

Notes: Due to rounding, the sum of the components may not correspond exactly to the totals.

NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 8.2

DESTINATIONS OF AMERICAN OVERSEAS EXPORTS
SHIPPED VIA CANADA
1982

Trade Areas of Destination	Customs Districts (East)			Customs Districts (West)			Total		
	Value*	% Total	% all Destinations	Value*	% Total	% all Destinations	Value*	% Total	% all Destinations
Western Europe	1 461.9	93.4	83.1	102.5	6.6	48.9	1 564.5	100	79.4
Eastern Europe	211.0	81.0	12.0	49.4	19.0	23.5	260.3	100	13.2
Middle East	9.9	81.0	0.6	2.4	19.0	1.1	12.2	100	0.6
Africa	20.4	99.0	1.2	0.3	1.0	0.1	10.7	100	1.0
Asia	36.1	46.0	2.0	42.5	54.0	20.3	78.6	100	4.0
Oceania	11.7	54.7	0.7	9.6	45.3	4.6	21.3	100	1.1
South America	6.9	71.6	0.4	2.7	28.4	1.3	9.6	100	0.5
Central America/Caribbean	1.7	95.6	0.1	0.1	4.4	NS	1.7	100	0.1
Others**	0.1	38.1	NS	0.2	61.9	0.1	0.4	100	NS
Total	1 759.7		100.0	209.8		100.0	1 969.4		100.0

* In millions of U.S. dollars.

**Saint-Pierre-et-Miquelon, Greenland.

Notes: Due to rounding, the sum of the components may not correspond to the totals.

NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

destination bloc with 13%, six times less than Western Europe[3]. Asian countries accounted for most other American exports via Canada.

By far the largest portion of American exports bound via Canada for Western Europe was cleared in the Eastern U.S. customs districts (Table 8.2). The Detroit (Michigan) district alone cleared more than 70% of all American exports passing through Canada and bound for Western Europe (Table 8.1). The four other Eastern districts (Ogdensburg, Buffalo, St. Albans, Portland) collectively cleared almost one-quarter of the value of these exports to Western Europe. An interesting finding revealed by the 1982 statistics is that almost one-half of the value of American traffic via the West Coast of Canada was destined for Western Europe. However, this traffic represented less than 7% of the value of American exports via Canada to Western Europe.

American exports bound for Eastern Europe and passing through Canada were also cleared primarily in the customs districts of the Eastern United States (Table 8.2). However, almost 20% of the value of such traffic was cleared in the West at Seattle (Washington) and Pembina (North Dakota). Analysis by country shows that this Eastern Europe traffic passing through Canadian Western Ports was primarily destined for the USSR (Table 8.3).

American exports via Canada to Asia were primarily cleared in the Western districts. Asia was the only destination exhibiting this characteristic. However, the amount of exports in question was rather minimal. For all other destination areas, the majority of exports left the United States via Eastern districts[4].

Table 8.3 lists the 15 principal countries of destination for American exports via Canada. Of these 15, 11 are Western European countries. The United Kingdom stood in first place, with slightly over one-quarter of the total value of American exports via Canada ($500 million). Belgium (and Luxembourg), West Germany and France were the destinations for over one-third of the value of American exports moved via Canada. Outside Western Europe, the USSR was the principal country of destination. It is interesting to note that in 1979, this phenomenon was virtually non-existent[5]. In 1982, the USSR became the third most important country of destination next to the United Kingdom and Belgium (and Luxembourg), accounting for almost 12% of the value of American exports via Canada.

In general, more than 90% of the value of American exports via Canada to each Western European country of destination was cleared by districts in the Eastern United States. On the other hand, over 20% of American exports via Canada to the USSR, 60% to Japan and 50% to Australia were cleared at points of exit in the Western United States.

Table 8.3

MAJOR COUNTRIES OF DESTINATION FOR AMERICAN OVERSEAS EXPORTS VIA CANADA
1982

Country of Destination	Value*	Percentage	Percentage Distribution by District	
			East	West
United Kingdom	506.0	25.70	94.5	5.5
Belgium/Luxemburg	287.8	14.62	95.4	4.6
USSR	233.2	11.84	79.2	20.8
West Germany	233.2	11.84	96.0	4.0
France	177.9	9.03	94.9	5.1
Netherlands	159.8	8.11	85.0	15.0
Japan	57.5	2.92	39.2	60.8
Italy	56.2	2.85	90.1	9.9
Switzerland	36.8	1.87	96.2	3.8
Sweden	22.9	1.16	94.1	5.9
Spain	18.8	0.96	69.4	30.6
Ireland	18.2	0.92	89.9	10.1
South Africa	17.2	0.88	98.9	1.1
Australia	16.3	0.83	49.0	51.0
Denmark	14.6	0.74	84.7	15.3
Other Countries	112.9	5.73	85.3	14.7
Total	1 969.4	100.00	89.4	10.6

* In millions of U.S. dollars.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

8.1.3 Commodities

Table 8.4 shows the distribution by major commodity group of American exports via Canada[6]. Machinery and transportation equipment (except automobiles) represented the most significant commodity group, accounting for slightly more than one-third of the total value of American exports via Canada. Slightly over half the total value consisted of products in the five major commodity groups on a relatively equal basis: end products, automobiles, semi-fabricated products, chemical products and crude materials.

Overall, given the major proportion of end products and semi-fabricated products (groups 6, 7 and 8), it appears that American exports via Canada are essentially commodities with a high unit value that can be containerized. This is supported by the data on the two principal traffic flows with Western Europe (Appendix G7) and Eastern Europe (Appendix G8). Road vehicles and industrial machinery represented a major portion of the value of commodity flows via Canada to these destinations.

Distribution by major destination blocs was uniform: regardless of the major commodity group, Western Europe remained the principal destination (Table 8.4). However, it should be noted that almost one-quarter of the value of American automobile, machinery and transportation equipment exports via Canada was destined for Eastern Europe.

8.2 American Overseas Imports Via Canada

8.2.1 Customs Districts

The customs district for American overseas imports corresponds to the furthest known inland location. The customs district in this case is not necessarily the point of entry into the United States or the final destination, but the customs district in the U.S. interior. Despite the fact that these districts do not permit the commodity route to be positively identified in every respect (as for exports), the customs districts where import declarations are filed nevertheless provide a satisfactory indication of the American destination areas for imports diverted via Canada (see Chapter 3).

In 1982, the three Midwest districts of Chicago (Illinois), Detroit (Michigan) and Milwaukee (Wisconsin) cleared more than half the total value of American imports via Canada (Table 8.5), while districts in the states of New York (Buffalo, Ogdensburg and New York City) cleared almost 30% and other eastern districts collectively almost 13%[7]. Thus, 94% of American imports diverted via Canada were probably unloaded in eastern Canadian ports.

Table 8.4

MAJOR DESTINATIONS, VALUE AND EXIT DISTRICTS
BY MAJOR GROUPS OF AMERICAN OVERSEAS EXPORTS SHIPPED VIA CANADA
1982

	Major Groups of Commodities	Destinations				Total Value			United States Exit Districts (%)	
		Western Europe	Eastern Europe	Asia	Other Destinations	%	Millions of dollars*	% Total	East	West
0	Food/Live Animals	94.3	0.5	2.2	3.0	100	147.5	7.5	77.5	22.5
1	Beverages and tobacco	82.9	4.7	0.0	12.4	100	1.5	0.1	100.0	0.0
2	Inedible crude materials	81.4	8.7	7.7	2.2	100	229.2	11.6	84.6	15.4
3	Fossil fuels, lubricants and related products	64.7	16.3	18.3	0.7	100	20.9	1.1	32.6	67.4
4	Oils and greases	84.4	0.0	0.0	15.6	100	0.9	0.0	93.5	6.5
5	Chemical and related products	91.8	4.4	1.4	2.4	100	211.6	10.7	98.7	1.3
6	Fabricated products (semi-end)	72.6	7.9	14.3	5.2	100	212.4	10.8	84.4	15.6
7	Machinery and transportation equipment	70.8	22.9	2.5	3.8	100	669.0	34.0	90.0	10.0
78	Automobiles	74.8	24.1	0.5	0.6	100	220.0	11.2	97.4	2.6
8	Miscellaneous end products	92.3	1.5	1.0	5.2	100	256.4	13.0	92.8	7.2
9	Others						NS	NS		
	Total	79.4	13.2	4.0	3.3	100	1 969.4	100.0	89.4	10.6

*In U.S. dollars.

Notes: Due to rounding, the sum of the components may not correspond exactly to the totals.

NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 8.5

CUSTOMS CLEARANCE DISTRICTS AND OVERSEAS ORIGINS OF AMERICAN IMPORTS ROUTED VIA CANADA
1982
(in millions of U.S. dollars)

Customs Districts	Western Europe			Asia			Other Origins			Total Value		
	In Value	In Percentage Dist.	In Percentage Orig.	In Value	In Percentage Dist.	In Percentage Orig.	In Value	In Percentage Dist.	In Percentage Orig.	In Value	In Percentage Dist.	In Percentage Orig.
East												
Chicago, Illinois	482.6	28.2	95.5	8.2	3.8	1.6	14.6	7.5	2.9	505.5	23.9	100
Detroit, Michigan	285.8	16.7	71.0	32.6	15.3	8.1	84.3	43.5	20.9	402.7	19.0	100
New York City, New York	144.5	8.4	65.2	49.1	23.1	22.1	28.1	14.5	12.7	221.7	10.5	100
Ogdensburg, New York	184.6	10.8	83.3	20.8	9.7	9.4	16.1	8.3	7.3	221.5	10.5	100
Milwaukee, Wisconsin	207.9	12.1	99.5	0.5	0.2	0.2	0.6	0.3	0.3	209.1	9.9	100
Buffalo, New York	122.4	7.1	73.1	28.9	13.5	17.3	16.1	8.3	9.6	167.5	7.9	100
Cleveland, Ohio	54.8	3.2	92.7	2.0	0.9	3.4	2.3	1.2	3.9	59.1	2.8	100
Minneapolis, Minnesota	55.8	3.3	97.8	0.6	0.3	1.0	0.7	0.4	1.2	57.1	2.7	100
Boston, Massachusetts	38.9	2.3	80.9	4.4	2.1	9.1	4.8	2.5	10.0	48.1	2.3	100
Other Districts	75.4	4.4	7.16	10.5	4.9	10.0	19.4	10.0	18.4	105.3	5.0	100
Total East	1 652.9	96.6	82.7	157.6	73.8	7.9	186.9	96.5	9.4	1 997.6	94.3	100
West												
Seattle, Washington	45.3	2.6	48.0	43.9	20.5	46.6	5.1	2.6	5.4	94.2	4.4	100
Great Falls, Montana	6.6	0.4	38.4	9.8	4.6	57.0	0.8	0.4	4.6	17.2	0.8	100
Other districts	6.3	0.4	69.2	2.2	1.0	24.2	0.6	0.3	6.6	9.1	0.4	100
Total West	58.1	3.4	48.2	55.9	26.2	46.4	6.5	3.4	5.4	120.6	5.7	100
Grand Total	1 711.0	100.0	80.8	213.6	100.0	10.1	193.6	100.0	9.1	2 118.2	100.0	100

Note: Due to rounding, the sum of the components may not correspond exactly to the totals.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

The portion cleared in the western districts of the United States was minimal (less than 6% overall). The Seattle district was foremost among western districts, but the value of American imports diverted via Canada and cleared in this district bordering British Columbia represented only slightly in excess of 4% of the total.

These findings, which indicate that diverted American imports were primarily routed to American states on the Great Lakes, are not exclusive to 1982. Since 1976, the first year in which American data were published on this subject, the Chicago and Detroit districts have always been the two major clearance districts. The Seattle district has never cleared more than 3% of the value of diverted American imports.

8.2.2 Origin of Traffic

Western Europe was by far the principal origin of American imports via Canada. Almost 81% of the total value of these imports originated in countries belonging to this trade area. Asia was second in importance, with ten times less the value of imports, and Africa third, with less of 4% (Table 8.6).

Almost all American imports from Western Europe via Canada were cleared in eastern customs districts: two-thirds in the Chicago, Detroit, Ogdensburg and Milwaukee districts and approximately 10% in the New York City and Boston districts (Table 8.5). Almost three-quarters of the value of American imports via Canada from Asia were cleared in eastern districts (almost one-quarter of this total in New York City). Lastly, imports from other origins passed almost entirely through customs offices in the East, primarily those in Detroit and New York City.

Table 8.7 lists the 15 principal countries of origin for American traffic via Canada. More than one-quarter of American imports via Canada originated in the United Kingdom. West Germany and France were second and third, together being the origin for one-third of the value of American imports via Canada. Nine other West European countries (Benelux, Italy, Switzerland, Ireland, Sweden, Spain and Denmark) were the origin for slightly over 20% of the value of American imports via Canada. Outside Western Europe, Japan was the principal country of origin, representing 5.5% of American imports via Canada.

In overall terms, over 95% of the value of commodities originating in Western European countries and diverted through Canada was cleared in eastern districts of the United States. Even for the two principal Asian countries of origin (Japan and South Korea), two-thirds and three-quarters, respectively of imports via Canada were cleared in the East.

Table 8.6

ORIGIN OF AMERICAN OVERSEAS IMPORTS ROUTED VIA CANADA
1982

(in millions of U.S. dollars)

Trade Areas Of Origin	Customs Districts (East)			Customs Districts (West)			Total		
	Value	% Total	% All Destinations	Value	% Total	% All Destinations	Value	% Total	% All Destinations
Western Europe	1 652.9	96.6	82.7	58.1	3.4	48.2	1 711.0	100	80.8
Eastern Europe	50.0	98.6	2.5	0.7	1.4	0.6	50.7	100	2.4
Middle East	4.6	98.2	0.2	0.1	1.8	0.1	4.7	100	0.2
Africa	73.7	98.8	3.7	0.9	1.2	0.7	74.6	100	3.5
Asia	157.6	73.8	7.9	55.9	26.2	46.3	213.6	100	10.1
Oceania	23.8	90.8	1.2	2.4	9.2	2.0	26.3	100	1.2
South America	17.9	89.0	0.9	2.2	11.0	1.8	20.1	100	0.9
Central America/ Caribbean	12.2	98.7	0.6	0.2	1.3	0.2	12.4	100	0.6
Others*	4.8	100.0	0.2	0.0	0.0	0.0	4.8	100	0.2
All origins	1 997.6	94.3	100.0	120.6	5.7	100.0	2 118.2	100	100.0

*Saint-Pierre-et-Miquelon, Greenland.

Note: Due to rounding, the sum of the components may not correspond exactly to the totals.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table 8.7

MAJOR COUNTRIES OF ORIGIN FOR AMERICAN OVERSEAS IMPORTS VIA CANADA
1982

(in millions of U.S. dollars)

Country of Origin	Value	Percentage	Percentage Distribution by District	
			East	West
United Kingdom	532.6	25.14	95.8	4.2
West Germany	450.0	21.25	96.8	3.2
France	258.2	12.19	97.2	2.8
Japan	117.5	5.55	64.7	35.3
Belgium and Luxemburg	110.2	5.21	99.2	0.8
Netherlands	75.3	3.55	97.4	2.6
Italy	66.5	3.14	96.4	3.6
South Africa	62.1	2.93	98.7	1.3
Switzerland	56.0	2.64	97.9	2.1
Ireland	48.8	2.30	99.9	0.1
Sweden	30.9	1.46	96.1	3.9
Poland	28.7	1.36	99.5	0.5
Spain	23.1	1.09	86.3	13.7
Denmark	22.8	1.07	98.2	1.8
South Korea	22.0	1.04	72.5	27.5
Other Countries	213.6	10.08	92.2	7.8
Total	2 118.2	100.0	94.3	5.7

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of Census data.

8.2.3 Commodities

Table 8.8 shows the composition of American imports via Canada by major commodity groups[8]. Machinery and transportation equipment (other than automobiles) represented the most significant commodity group and accounted for one-quarter of the total value of American imports via Canada. Semi-fabricated end products stood second, with slightly less than 20% of the total value. Almost 16% of the value of American imports via Canada were chemical products, the third most important commodity group. Fourth and fifth were miscellaneous end products and automobiles, which collectively represented more than 22% of the value of American import flows via Canada.

As in the case of exports, it would appear that American imports via Canada consisted of general cargo with a high unit value (machinery, end products and automobiles) which can usually be containerized. The breakdown, by commodity, of traffic originating in Western Europe (Appendix G9) and Asia (Appendix G10) gives a detailed picture of this finding.

The distribution by major areas of origin (Table 8.8) shows that for all commodity groups, the principal area is Western Europe. However, it should also be noted that over 20% of the value of miscellaneous end products, almost 17% of fabricated products and 10% of machinery imported into the United States via Canada originated in Asia. Moreover, over one-third of the value of food products originated in countries other than those in Western Europe and Asia.

Table 8.8

DISTRIBUTION BY MAJOR COMMODITY GROUPS OF AMERICAN OVERSEAS IMPORTS VIA CANADA
1982

	Major Groups of Commodities	Origins			Total Value			United States Customs Districts (%)	
		Western Europe %	Asia %	Other %	%	Millions of Dollars*	% Total	East	West
0	Food	52.5	10.8	36.7	100	96.5	4.6	95.4	4.6
1	Beverages and tobacco	92.5	0.0	7.5	100	142.3	6.7	99.1	0.9
2	Inedible crude materials	69.2	10.3	20.5	100	55.7	2.6	93.5	6.5
3	Fossil fuels, lubricants and related products	98.5	0.0	1.5	100	0.6	0.0	99.6	0.4
4	Oils and greases	76.5	20.7	2.8	100	0.9	0.0	74.2	25.8
5	Chemical and related products	76.9	1.5	21.6	100	332.3	15.7	99.1	0.9
6	Fabricated products (semi-end)	75.9	16.5	7.6	100	433.6	20.5	88.0	12.0
7	Machinery and transportation equipment	87.7	10.0	2.3	100	582.2	27.5	96.1	3.9
78	Automobiles	94.2	5.2	0.6	100	221.7	10.5	92.9	7.1
8	Miscellaneous end products	72.9	20.3	6.8	100	248.6	11.7	97.7	2.3
9	Others	93.9	2.1	4.0	100	3.8	0.2	99.8	0.2
	Total	80.8	10.1	9.1	100	2 118.2	100.0	94.3	5.7

*In U.S. dollars.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

FOOTNOTES

[1] U.S. Department of Commerce - Maritime Administration: U.S. Exports and Imports Transhipped via Canadian Ports, 1981, p. 3 and 1982, p. 3.

[2] See Appendix E for list of countries by trade area.

[3] Including the USSR.

[4] See list of districts, Appendix C.

[5] U.S. Department of Commerce - Maritime Administration: U.S. Exports and Imports Transhipped via Canadian Ports, 1981, p. 6 and 1982, p. 6.

[6] The major commodity groups are defined in Appendix B.

[7] See list, Appendix D.

[8] The major commodity groups are defined in Appendix B.

Chapter 9

THE DIVERSION PHENOMENON: A CONCEPTUAL ANALYSIS

Earlier chapters have discussed and compared the scope and trends of diverted Canadian and American traffic. This chapter goes beyond the statistical presentation of factual data and presents some concepts and analyses designed to define better the traffic diversion phenomenon. The following sections distinguish between various ways of analysing diversion and highlight some of the characteristics of each by discussing the general parameters involved.

9.1 Approaches

Itineraries for the international transportation of commodities vary according to the location of the buyer and seller. This summary statement allows us to chart a simple map of the worldwide flow of traffic, but tends to obscure the complex infrastructures and networks used to transport commodities. A study of diverted traffic shows that the routes and modes of transport for commodities shipped to the same destination can be numerous. Thus, in order to understand traffic routes, it is necessary to determine, from the organizations and modes that make up the international commodities transport system, what principles and strategies underlie the itineraries of traffic generated by international trade.

The international ocean transport system is often described in terms of numerous sectors of activity[1]. A distinction is made between industries directly involved in transporting cargo (ocean and land carriers), support services (ports, handling, forwarding, etc.) and institutions such as government departments or agencies, international organizations, and trade unions whose activities influence those of carriers and suppliers of related services. Although all these agents are involved in transportation, they belong to a variety of sectors, each of which is a distinct economic centre. As a result, different decision-making bodies of varying importance (simple or complex) throughout the world transportation system have developed plans, objectives and strategies that may conflict with those of others. Ocean carriers, forwarders and governmental maritime organizations often have very different economic outlooks. There is a very significant difference between the logic of a transportation company's action at the microeconomic level and that of a nation at the macroeconomic level. The concept of efficiency particular to each transportation company often conflicts with the rationale for economic activity serving sectorial or general interests. It is thus evident that the various agents involved pursue different activities and that their strategies are specific to their particular area of activity.

This observation leads to the conclusion that the physical direction of commodity flows is determined by the interaction of these various strategies. When studying specific routing phenomena, such as diversion, it is necessary to distinguish between the different levels of strategic analysis.

The traffic diversion concept does not have exactly the same meaning for ocean carriers, port communities or nations. The ocean carrier's objective is to get the best possible return on his investment. His concern is to rationalize his services to the maximum; in this regard, diversion primarily concerns his vessel. Thus, the carrier seeks to optimize the vessel's itinerary by avoiding detours that may generate additional expenses. A port's objective, however, is to attract as much traffic as possible. It competes with other ports capable of serving the same hinterlands. Traffic diversion thus represents a loss of traffic that a port could have turned over to its own profit. Lastly, from a national perspective, the manner in which commodity flows are routed affects the national, regional or sectorial economy. Thus, the diversion of domestic traffic via a neighbouring country may represent an economic policy problem.

These three levels of analysis correspond to three real strategies which partially determine the routing of traffic. Governmental macroeconomic analysis affects carrier and port activities (laws, regulations, etc.); the carrier's strategy reflects his business activities in the marketplace; and ports perform both micro and macroeconomic analysis since they can be considered either as corporations, groups of corporations or communities. These different types of analysis also correspond to two major types of research in transportation economics. The transportation company approach deals with research on ocean transport management problems (analyses of operating costs, funding, choice of investments). The economic policy approach concerns a broader field, that of understanding the impact of trends in the transportation system on economic development (for example, impacts of the balance of payments, on the development of a domestic fleet or on port development). The port approach involves both types of research. A port may develop marketing strategies in the same manner as any other corporation, but it may also seek to determine the impact of its activities on the city in which it is located.

Each approach is valid in its particular context. An understanding of transport routes through analysis of carrier operation strategies resolves only one aspect of the diversion issue. Carriers must contend with a certain number of restrictions originating outside their realm of activities. Since transportation is not an end in itself it must therefore be considered in conjunction with the socio-economic functions it performs. It follows, then, that the carrier is also dependent upon analyses conducted by other transportation companies, ports, communities and governments. Transportation routes are the

result of overlapping plans and decisions made by each branch of activity and are designed on the basis of different levels of analysis. The purpose of the following sections is to discuss analytical frameworks for diversion phenomena from the perspective of carriers and port communities, and in overall terms.

9.2 Ocean Carriers and Diversion

This section discusses some of the principles governing ocean carrier activity that may affect worldwide commodity shipping routes and, more specifically, those that may give rise to traffic diversion. One of the findings presented in Chapter 7 showed that Canadian traffic diverted via the United States is mainly loaded and unloaded from liner shipping vessels. The following discussion deals specifically with ocean carriers offering liner shipping services.

Liner companies are private corporate entities that act in their own interests. They combine various production elements to market their services with a view to operating a viable business i.e., to ensure income or profit from the difference between their expenditures and revenue from the sale of services. In this regard, they are not particularly different from other businesses operating in a market economy. In theory, the liner carrier is not obliged to offer his services in a given area at all times. He decides when and where his liner services begin and end based on profitability estimates[2]. However, given the lack of government regulations governing the right and obligation to maintain services, the liner shipping industry, whose activities are international, has developed a self-regulating system of shipping conferences.

There are many types of shipping conferences, and the debate has traditionally focussed on the real state and degree of conference liner competition. There is no general solution. The organization of liner shipping varies according to the particular market. However, as the British Marine Transport Centre study shows, despite the fact that liner shipping often appears to be a very concentrated industry with a small number of companies sharing large market segments, it operates in a highly competitive environment[3].

For the Canadian and U.S. markets, no particular company is guaranteed a specific "market share". On the Europe-North America route, many companies unable to meet the competition were forced to cease their activities during the late 1970's and early 1980's[4]. The struggle to control and retain market share is still intense, particularly as newcomers to the industry often threaten established positions (more specifically in "open" conferences). In such an environment efficiency and profitability are the prime objectives, meaning that liner companies have to control their costs[5].

One characteristic of liner companies is the high level of fixed costs i.e., costs which, in the short term, are independent of the level of production and which the company must absorb if it wishes to continue operations. The high fixed costs are due, in particular, to the vessel, which generally represents a large capital investment. Fixed costs are also high because, when a vessel is operated on a scheduled basis, constant service must be maintained regardless of demand. A third reason for high fixed costs is that the service is provided in dispersed and relatively small units in comparison to the vessel's size. Thus, if the company wishes to optimize the use of its vessels and benefit from economies of scale, it cannot avoid a certain number of costs related to freight collection. Increasingly, liner companies offer a complete commodity distribution system and no longer solely a seaborne transport service. These services entail expenditures which may be variable, but some of which are also made up of fixed costs (containers, specialized terminals, agency networks).

When a company implements its operational plans, it chooses its vessels, determines the areas to be served and thus, for a medium or long-term period, commits to a certain level of fixed costs which, being the major portion of its total costs, will have a prevailing influence on the profitability of its operations. The liner company's course of action is therefore linked to these particular characteristics of the liner service industry. Its investments are very great, on a large-scale, and call for rationalized operations. Such rationalization includes designing a service network that enables vessels to be used to the maximum (i.e., avoiding less than capacity loads). On the basis of this strategy, companies decide whether or not to serve a given port. Their decisions directly influence commodity shipping routes available to shippers.

Determining optimal service routes is a vast and complex matter. Discussion here is limited to presenting some aspects of the strategies which most directly affect diversion. A distinction is often made between pre-containerization strategies and the present-day strategies that have developed progressively since the first transatlantic containership crossing in 1966.

Traditionally, liner companies would concentrate on the ocean shipping aspect of their service. Freight rates covered the cost of the vessel, its operation and a limited portion of handling costs. The company's choice of ports of call was relatively simple. It had to serve ports close to large markets (industrial region, specific industry, city, etc.). The decision to call at an additional port on a given route thus depended on whether additional income would offset the additional costs. Because of this, the port's hinterland or transportation market area it could claim to serve, was easily identifiable. This system resulted in a multiplication of ports of call since

transportation markets could be numerous and dispersed, and meant that the liner company's itinerary was complex. Such "multiport" itineraries are a classic element of strategies for ocean trade ports-of-call networks.

Prior to integration of sophisticated intermodalism, tariff policy practices largely consisted in establishing relatively (if not fully) standard rates for all major ports of call along the entire route[6]. For example, until the early 1980s, some transatlantic conference liners operating in Canada considered the ports of Québec and Saint John (N.B.) as main ports in the same manner as Montréal or Halifax. Nowadays, some conference lines no longer consider these ports as main ports and charge shippers an additional fee for loading or unloading merchandise in Québec or Saint John.

In the conventional system, the shipper would choose the port closest to markets to minimize the overland portion of his total transportation costs. The shipper was entirely responsible for inland transportation costs to and from the port.

With the introduction of new transport and containerized freight handling technologies, new strategies appeared. Containerization facilitated commodity transhipment from one mode of transport to another, but nonetheless required complex and costly infrastructures. The advantages and disadvantages of containerized shipping were the subject of much debate by specialists in ocean transport. However, the system has extensively modified liner company strategy for organizing distribution systems. Containerization allows for economies of scale with respect to both vessels and ports and anticipated savings must be great enough to offset the high cost of containerization (facilities, vessels, etc.). Because economies of scale are only effective when a large volume of containers are handled by a limited number of ports, freight is collected from a larger hinterland than ports were traditionally able to develop.

Reaching the transportation market lying beyond the natural limits of the port's hinterland involved a major change in liner company services and in the tariff system. Companies had to become involved in a much larger and more comprehensive distribution system that included overland transport, feeder services, handling and transfer between modes (intermodal transport).

These new "door-to-door" rather than "pier-to-pier" services suited the needs of shippers who increasingly sought a simpler and more complete transport route from the point of departure to final destination[7]. In terms of tariffs, service to a more limited number of ports resulted in what is known as the "absorption" rate practice, whereby the cost of inland transport to remote areas is in part cross-subsidized by income from the

ocean leg of the journey. Consequently, inland transport costs became a less significant factor in the shipper's choice of port.

Beyond considerations relating to the quality of service, shippers became more indifferent as to the choice of port, and such decisions were increasingly left to liner companies. Under the "traditional" approach, a shipper who had to choose between sending his commodities to an overseas destination via port A (which was closest) and port B (which was further away) would normally choose port A to reduce the inland transportation costs for which he was responsible (where the ocean leg of the journey was identical for port A and B). Liner companies would serve port A because there was sufficient local demand. Under the new approach, however, the shipper may be offered a less costly door-to-door transport service, for the same destination, via the more remote port B. The liner company or companies may offer to ship the goods via port B, now competitive with port A, by subsidizing a portion of the overland costs through income generated by the ocean leg of the journey. If A and B were both ports of call for the same overseas destination, liner companies might decide to concentrate traffic in port B, which might enable them to benefit more from the desired economies of scale. As noted above, economies of scale related to the container transport system depend on a significant flow of commodities on concentrated routes. The container transport system has introduced intermodalism, a new type of transport service for complete routing circuits.

Theoretically, the container system rationale requires that one port or a limited number of ports serve a large market area, since freight traditionally shipped via several ports can now be shipped via a small number of ports. Distance is not necessarily a disadvantage for shippers located in remote areas. Company strategies resulting from this system have led to the idea that, in the future, ocean itineraries may well be heavily concentrated and include only super-ports of call.

The new strategy (a super-port with overland transport or shuttle service) did not abruptly supplant the other (traditional multi-port) and liner companies continue to serve several ports on the same seaboard while concentrating their traffic in certain ports and seeking intermodal-type solutions to their network organization.

According to the particular characteristics of the major routes on which they operate, companies choose from among several strategies, for there is no single solution. The important point is that the company's choice of port is no longer strictly based upon anticipated income from the port's traditional hinterland, but also on the potential for easily integrating the port into an overall system including inland transport, port operations and ocean shipping.

The consequences of various liner companies having developed different strategies have and will continue to have a significant impact on diversion. With the absorption practices of intermodal transport, hinterlands are much larger and less well defined. Traffic which traditionally would have been directed to the closest port can now be directed toward a more remote port, even in a different country. The diversion patterns between Canada and the United States, as discussed in this report, can be changed by new company strategies. For example, a system extending from Europe to the East Coast of North America and including only two or three ports of call on the Atlantic coast by large container ships would undoubtedly have an impact on the movement of diverted traffic. This problem recently surfaced when "round-the-world services" were launched. One wonders whether a port such as Montréal, which is not located on the seaboard, might diminish in importance as a result of the new ports-of-call strategies. On the West Coast, the high level of diverted Canadian import traffic via American North Pacific, and even California, ports may already be indicative of liner service trends.

Because they increasingly involve worldwide routing systems throughout the transportation chain, the various strategies adopted by liner companies call into question the geography of commodity flows. The costs and characteristics of pre- and post-routing have increasingly become decisive factors in determining whether or not a port should be served. More and more this decision is based on "delivery to destination" costs from the port. This trend has changed the geography of flows. There has been a shift from the physical geography of commodity flows determined by ports and their natural hinterlands, to the economic geography of flows determined by the potential for developing optimum transport networks on the basis of a more limited number of ports.

When designing transportation networks, companies are trying to achieve efficiency irrespective of the "nationality" of traffic. Domestic hinterlands have become international hinterlands, and borders play a less significant role. However, this trend is having a major impact on the economic activity of countries and, more particularly, of ports.

9.3 Port Communities and Diversion

Compared to liner companies, ports are more complex economic centres in that it is more difficult to define: (1) the exact scope of their activities, (2) the true meaning of maximum efficiency, (3) who benefits from their efficiency and, in a more general sense, (4) their precise objectives. These difficulties stem primarily from the fact that ports, particularly those which handle general cargo (containerized or not), usually represent a combination of private and public interests. The institutional

structure of most of the world's ports indicates government involvement, to different degrees, in their management[8].

The purpose of this section is to present some characteristics of port organization. Any analysis of diversion phenomena is closely related to the analysis of port competition and the principles of port operation. More specifically, traffic diversion poses the problem of defining a port's role and functions. A port may be considered as a simple transhipment point where the cost of utilization must be minimal for shippers and carriers. From this perspective, regardless of whether the port is domestic or foreign, it must not inflate the total costs of the transportation chain since such costs influence the price of exports and imports. On the other hand, if a port is considered a key element in the development of a city, region or even a country, traffic routed to other ports, especially those in foreign countries, has negative consequences for all members of the communities involved.

A port supplies a number of complex services. Some are directly related to its maritime function: access channels, piloting, docks, warehousing, handling methods, etc. These facilities represent the port's infrastructure, the technical means of transferring commodities between various types of transport modes. Other services relate to the port's commercial function: customs transit and warehousing, insurance, banks, brokerages. These services are not directly related to traffic, but to their commercial base. Lastly, ports can perform para-industrial functions in that they make it easier for industries to set up operations nearby: industrial land near the port, communications between the port and the plants, special infrastructures for industry, etc.

Ports thus represent a broad range of activities which frequently go well beyond the transhipment of commodities. Given this range, the term "port community" is perhaps more appropriate. It is often difficult to distinguish between intrinsic port activities and those established after the port's infrastructure has developed, or those that resulted from industrial agglomeration. This complex issue, more often the rule than the exception, means that a port cannot be considered in the same manner as a simple commercial enterprise. Normally, a port supplies public services. Port development strategies must therefore meet the needs of a significant number of parties: direct users (shippers and carriers), indirect users, and collectivities that depend fully or in part on the port (city, region, province, state, nation). Port strategies usually form part of the framework of general interest, public-sector policies. A port's economic behaviour in terms of tariffs and investment policy is thus often heavily dependent on the nature and degree of government involvement[9]. A port is basically a community enterprise and develops according to the community's idea of what a port must or should be.

Following is an example of what a public port's investment policy could be[10]:

Four major objectives:

1. to be profitable, through the adoption of a pricing policy that covers investment costs;
2. to choose investments that generate employment and revenue for the port itself;
3. to stimulate the local economy and generate income for the region in which the port is located (multiplier effect); and
4. to reduce user costs for shippers and carriers in order to attract new traffic to the port and thereby increase revenue and benefits that are of assistance to port and regional development.

This example shows that a public port's objectives do not focus exclusively on profit but also on the impact on the port-dependent community[11].

Port policies therefore fall within the public interest. What form should government intervention take? What should the approaches to management and investment be? What type of tariff policy should be adopted?

Government intervention in port management takes many forms throughout the world. The degree of involvement varies according to the country in question[12]. In Canada, the federal government plays a significant role[13]. In the United States, ports are administered by state or municipal bodies and, in some cases, by the private sector[14].

Although investment and development policies vary from one port to another, investments are by and large the responsibility of government authorities because of the very high costs of port infrastructures and because ports represent the public interest. Even in the United States, government finances almost half of all large-scale port projects, either directly or indirectly[15].

Generally speaking, government is financially committed either to creating infrastructures or to operating them. This poses the problem of setting prices for port services and of determining investment optimization criteria. Setting port tariffs is a matter of government pricing policy: should tariffs be set according to average costs, short-term marginal costs (related only to operations), long-term marginal costs (marginal cost of all fixed and variable factors), or marginal development

costs (bearing in mind the additional facilities needed to meet long-term demand)?

In theory, optimum port investment should satisfy forecasted demand at the lowest long-term marginal cost: the appropriate price should be equal to long-term marginal costs. In reality, it would appear that most ports do not follow this general rule[16]. This can be explained by the fact that a port is not a private enterprise or isolated firm[17]. However, ports do compete with other ports for the same hinterlands. Moreover, ports are subject to external factors which are usually taken into account in port policies. Thus, competition between ports obliges each to offer the same level of service as its neighbour, especially if the latter is a foreign port, and to supply such services at a very low cost[18]. As a result of competition, the port acquires excess capacity. In an unending process, facilities are installed to attract traffic and user costs are lowered [19]. The fact that communities are often responsible for the facilities is a contributing factor. Communities that participate in developing port facilities are interested in creating economic benefits for themselves (e.g., a municipality helps finance a port to boost the local economy). Investments are therefore based on the cost-benefit calculation of the investing port community. This is a very important factor. For the benefit of the collectivities served and which provide partial funding, ports design their investment and tariff policies to attract as much traffic as possible i.e., shippers and carriers (see example of public port policy at the beginning of this section). Because of this, competition between ports able to serve the same hinterlands is fierce. It is difficult for a community to accept that traffic destined for these ports, along with the expected economic benefits, should be routed to other ports. Technological developments and carrier policies (see Section 9.2) increase this competition. If the trend in new routing systems is to concentrate traffic in a smaller number of ports, few ports are likely to concede that they have fewer economic advantages to offer or that they should abandon their traditional routing network policy.

The problem is that a port is only one link in the transportation chain. A major issue in the traffic diversion debate is whether ports should be the determining factor in traffic routing because of external factors generated in the port area. Although it is true that traffic does bring economic benefits, it is still unclear as to who reaps the benefit: carriers, shippers, the city, the province, or the country? Traffic diversion reflects the advantage of one port or group of ports over others. A port which loses traffic by diversion will do everything possible to regain it. In overall terms, it is clear that analysing traffic diversion from the port's standpoint is inadequate. Port competition affects only the sectorial interests concerned. The same holds true for ocean carrier strategies. By studying the "economic outlook" of the carrier,

we gain an understanding of the significance and impact of diversion on this particular branch of activity only. The issues still have to be examined in terms of the transportation chain as a whole.

9.4 Diversion: An Overview

The manner in which diverted traffic problems arise in a broader context than that specific to carriers or ports is well illustrated by the recent and ongoing debate in the United States over American traffic diverted via Canada. In addition to specifically analysing the situation which prompted this debate, identification of the parties concerned and a presentation of their arguments will give a better understanding of the general traffic diversion issue.

The American debate has for years focussed on legislative bills whose purpose is to require ocean carriers serving ports in adjoining countries (particularly Canadian ports) and shipping American imports or exports, to file tariffs with American authorities, in particular the Federal Maritime Commission (FMC)[20]. Those supporting such bills argue that this would re-establish genuine competition between American and Canadian ports, competition which is compromised by the fact that carriers serving Canada are allowed a greater degree of flexibility in setting their rates than that allowed to carriers serving American ports (regulatory gap)[21]. The regulatory advantage of carriers serving Canada and routing American commodities allows them to offer more attractive rates to American shippers with the result that traffic "normally" destined for American ports is diverted to Canadian ports. The bills were designed to put an end to this advantage. Consequently, it was hoped that diversion via Canada would decline to the benefit of the American ports concerned.

The supporters and sponsors of these bills were primarily representatives of the interests of American North Atlantic ports, certain American carriers, longshoremen's unions in the ports concerned and the Federal Maritime Commission[22]. Opponents of the bills were mainly importers and exporters from the Midwest and Great Lakes regions and several U.S. government organizations (especially the Department of Commerce, Department of Justice, Department of Transportation and the State Department)[23].

Arguments in support of the bills are that all ocean carriers transporting commodities originating in or destined for the United States should compete within the same legislative framework so that cost advantages and productivity alone would determine the outcome of such competition. Without standard regulations for all, traffic would increasingly be diverted via Canada, thereby representing a significant loss of income and jobs for American ports and regions[24]. Arguments against are

that these bills promote only regional and individual East Coast interests to the detriment of the rest of the United States, especially carriers who benefit from attractive transport conditions via Canada, consumers who end up paying less for goods, and West Coast ports receiving a significant amount of Canadian traffic. Moreover, the bills would increase ocean freight rates. The fact that competition from Canadian ports would diminish or be non-existent would strengthen the power of conferences serving the United States and would not oblige them to improve their services. The effects of the bill would be borne by all American carriers. Moreover, such bills go beyond purely domestic matters and infringe upon the sovereignty of neighbouring countries. Such countries might take retaliatory measures affecting regional and national economic interests. Lastly, these bills are not in step with the general thrust toward deregulation, and would add more regulations to the seemingly already over-regulated U.S. maritime sector.

The principal elements of the American debate help identify the major aspects of the diversion phenomenon.

A. Technological change and new ocean transport strategies play a major role. Among ocean carriers serving Canada and a target of the various U.S. bills, the CAST corporation, considered responsible for a significant portion of diversion via Eastern Canada, displays many characteristics of the new ocean strategies (highly developed containerization, a single Atlantic port of call, door-to-door rates, control over the movement of commodities from origin to destination, etc.). New strategies are currently being developed, one example of which is round-the-world service[25]. These strategies accentuate the problem of which ports are to be served and which excluded from the new international routing network.

B. The debate on traffic diversion, in the United States or elsewhere, raises the question of who will win and who will lose. The American debate is a good illustration. American ports on the North Atlantic seaboard are lobbying for legislation to help them retain traffic. However, they are opposed by other economic centres that benefit from traffic diversion. In other words, the loss of income and jobs on the East Coast represents a gain for other regions. If the import-export sector of Midwest and Great Lakes industries benefit from advantageous transport conditions via Canada, they can expand and create income and jobs in their regions. Also, from the consumer's point of view, imported products are cheaper because of savings in transportation costs. Diversion thus poses a problem for determining economic priorities within a national collectivity.

This is a problem not only between carriers and ports but also among ports themselves. In Canada, eastern ports benefit from American traffic whereas western ports lose traffic, especially import traffic, to the U.S. Thus, all domestic ports

do not necessarily share the same interests. In this respect, federal government policies on port development raise the issue of whether the interests of a specific port or the entire nation should be given priority. The answer may lie in a port system approach that is part of a broader economic context (for example, where priority is given to importers and exporters).

C. At the national level, traffic diversion is a complex problem of economic decisions which, by and large, are beyond the scope of any analysis of individual links in the transportation chain. What are the actual losses and gains created by traffic diversion? A simple addition of the volume and value of traffic "gains" and "losses" provides no answer. Actual gains and losses in terms of income and jobs are distributed in a complex manner throughout the national economy. The socio-economic impact of diverted traffic varies greatly from one region to the next, both nationally and internationally.

An example of this complexity is the scope of a port's actual economic impact on the region, an element of which is the changing role of ports[26]. With the containerization system, warehousing has lost its traditional importance whereas transportation plays a greater role (linkage between land and ocean routing of container traffic). Containers are transited quickly through the port, and its traditional functions of warehousing, handling or even container-related activity (stuffing and unstuffing) can be performed elsewhere. Because of this, commodity flows may have less of an impact on job creation and industrial development relating to the port's proximity. Industries may, for example, decide to locate further inland, near an inland container terminal[27]. In terms of employment, it is not evident that containerized traffic has a very significant or definite impact on the port region itself.

D. Traffic diversion highlights the increased interdependency of the inland carrier, international ocean carrier and ports. Carriers base their choice of port on its potential for integration with the routing circuit as a whole, in which land carriers play an important role. Ports no longer monopolize a well-defined hinterland and increasingly depend on developments beyond their control[28]. Land transport is more and more an integral part of the transportation chain. Its role in ocean carrier strategies is assuming greater importance, and ports have to bear this in mind. Thus, a port does not "divert" traffic destined for another port. Instead, diversion is the result of strategies beyond the port's control, and whose effect is to favour a foreign rather than domestic port. In the American debate on diversion, the bills were aimed at carriers and not ports.

E. Traffic diversion leads to the more general debate on protectionism versus free trade. The difference with respect to diversion is that it involves the international exchange of

services rather than goods. Can a defence of domestic transport or port services justify the limitations of the traffic diversion phenomenon? Does such traffic not imply a certain degree of internationalization in the transport network at the pre- and post-routing level?

9.5 Conclusion

Traffic diversion raises the problem of controls over international routing circuits. The various directions in which the international transport system has developed, with respect to carriers as well as others involved at different stages of the transportation chain, show that competition, both between ports and transportation circuits, plays an increasingly important role. The cost and quality of the entire routing scheme influences the shipper's choice and the carrier's strategy. Regional socio-economic problems (relocation of economic activity) as well as national problems arise from the transport system's changing nature. Even if efficient international routing networks entail calling at foreign ports, they do not change the fact that international borders still exist. Whatever the shipper's and carrier's advantage in diverting traffic, it will always be difficult for one country to accept that its foreign trade depends entirely or in large part on the networks and infrastructures of foreign ports. This problem calls to mind the issue of creating or maintaining a domestic merchant marine fleet. Traffic diversion phenomena prove that it is difficult to consider the maritime component of international transportation without also considering its land and port components (intermodal and multimodal transport). In the future, government strategies in ocean transport will most likely become increasingly coordinated with those related to ports and inland transport.

FOOTNOTES

[1]Bernhard. J. Abrahamsson, International Ocean Shipping: Current Concepts and Principles, Westview Press Inc., 1980, p. 23.

[2]This, however is not always the case. Some state-owned corporations or corporations subsidized by the government have service requirements.

[3]Roy Pearson - John Fossey, World Deep-Sea Container Shipping, Marine Transport Centre, University of Liverpool, 1983, Chapter 3, p. 70.

[4]Idem and R. Abbott, The Supply of Liner Shipping to Canada, Canadian Transport Commission, Research Branch, Research Report No. 1984/03E, June 1983.

[5]Even if a company is state-owned, its poor performance is financed by taxpayers and its inefficiency has an impact on collective wealth.

[6]See Roy Pearson - John Fossey, World Deep-Sea Container Shipping, Maritime Transport Centre, University of Liverpool, 1983, Chapter 4, "Container networks", p. 96-97. The authors present almost twenty possible company strategies.

[7]This question is not a matter of universal agreement. See, for example, H.W. Dick, "Containerization and Liner Conferences: A Polemic" in Maritime Policy and Management 1983, Vol. 10, No. 3, pp. 165-180.

[8]Richard Goss, Policies for Canadian Seaports, University of Wales, Department of Maritime Studies, Cardiff, 1983.

[9]J.M. Verhoeff, "Seaport Competition: Some Fundamental and Political Aspects", in Maritime Policy and Management 1981, Vol. 8, No. 1, p. 56.

[10]Henry S. Marius, James E. Short, John C. Fuypers, Paul Roberts, Federal Port Policy in the United States, MIT Press, 1976, p. 9.

[11]This factor is found in Canadian port policy objectives: its aim is to establish a port system "that is an effective tool in achieving Canada's international trade objectives, as well as economic and social objectives at the national, regional and local levels" (our emphasis). Canada Ports Bill, Transport Canada, Marine, February 1982.

[12]See Chapter VI of the Policies for Canadian Seaports report prepared for the Canadian Transport Commission by Professor Richard Goss, Department of Maritime Studies, University of Wales Institute of Science and Technology, Cardiff 1983.

[13]See Canada Ports Act, Transport Canada, 1982.

[14]The National Research Council, Maritime Transportation Research Board, Port Development in the United States, Washington, D.C., 1976, p. 40.

[15]R.P. Wilder and D.R. Pender, "Economic Behaviour of Public Ports in the U.S.", Journal of Transport Economics and Policy, May 1979, pp. 175-176.

[16]See R. P. Wilder and D.R. Pender, "Economic Behaviour of Public Ports in the U.S.", Journal of Transport Economics and Policy, May 1979, p. 178. This analysis concerns American ports. For an analysis of ports in general, see: Pierre Bauchet: "L'économie du transport international", Economica, 1982, p. 349.

[17]The marginal cost theory basically concerns the strategy of an isolated firm relatively independent of its environment.

[18]Pierre Bauchet, "L'économie du transport international de marchandises Air et Mer", Economica, Paris, 1982, p. 352.

[19]These port strategies can be compared to the preventive strategies of firms in an oligopoly. In this situation, firms set their prices lower than other firms who maximize the industry's profits in the short term but overcome potential competition over a longer period. Another preventive strategy of a firm in this situation is massive investment: the firm increases its fixed capital beyond the requirements of demand in such a manner that facilities are never used to capacity and new competitors have no advantage in increasing the industry's productivity.

[20]See article by Richard A. Lidinsky Jr. and Robert E. Hellower Jr., "American Canadian Cross Border Container Traffic: Innovation or Cargo Diversion", Journal of Maritime Law and Commerce, Vol. 15, No. 1, January 1984, p. 110. The diversion debate began in 1977 when pressure began in favour of a legislative bill on the subject. Although Bill H.R. 1511 was defeated by Congress on September 18, 1984, a new bill, S. 188, with an identical objective, was introduced by Mr. Inouye to amend the United States Shipping Act.

[21]Details and characteristics of these various bills are described in Mark C. Miller and Peter J. Plokci, "The Diversion of U.S. Ocean Cargo through Canadian Ports: An Evaluation of the Need for Regulation", George Washington Journal of International Law and Economics, Vol. 17, 1982.

[22]Among the principal sponsors of the bill were:
- North Atlantic Ports Association
- Sealand Services Inc.
- American Institute of Merchant Shipping
- International Longshoremen's Association
- Gulf Port Association.

[23]See Mark C. Miller and Peter J. Plocki, op cit, p. 191.

[24]The North Atlantic Ports Association (NAPA) provides a precise estimate of traffic losses due to diversion via Montreal (5,000 jobs in 1981, for example). For coastal and related jobs see A. Lidinsky and Robert E. Hellauer, op cit, p. 110.

[25]Primarily projects of U.S. Lines and Evergreen.

[26]Y. Haryuth, Port Development in Light of Intermodal Transport, paper delivered at the international symposium "New Challenges for Shipping and Ports", held at Haifa University, Israel, May 28-29, 1984.

[27]Inland container terminals or "inland intermediate platforms".

[28]Y. Haryuth, op cit, p. 127-129.

APPENDICES

Appendix A

DEFINITIONS: CUSTOMS DISTRICTS STUDIED FOR DATA ON CANADIAN EXPORTS AND IMPORTS VIA THE UNITED STATES

The American seaboard is divided into six coastal districts covering all American ports. Each coastal district is defined by the customs districts to which the ports belong.

U.S. East Coast

Code 1 North Atlantic Coastal District

Includes the following coastal districts (Classification D):

	01	Portland (Maine)
	02	St. Albans (Vermont)
	04	Boston (Massachusetts)
	05	Providence (Rhode Island)
	06	Bridgeport (Connecticut)
	10	New York City (New York)
	11	Philadelphia (Pennsylvania)
	13	Baltimore (Maryland)
	14	Norfolk (Virginia)
	54	Washington, D.C.

Code 2 South Atlantic Coastal District

	15	Wilmington (North Carolina)
	16	Charleston (South Carolina)
	17	Savanna (Georgia)
Port*	18-03	Jacksonville (Florida)
Port	18-05	Fernandina Beach (Florida)
Port	18-16	Port Canaveral (Florida)
	49**	San Juan (Puerto Rico)
	52	(except 52.02 (Key West)) Miami (Florida)

Code 3 Gulf Coastal District

Port	18-01	Port Tampa (Florida)
Port	18-07	Boca Grande (Florida)
Port	18-14	St. Petersburg (Florida)
	19	Mobile (Alabama)
	20	New Orleans (Louisiana)
	21	Port Arthur (Texas)
	22	Galveston (Texas)
	23	Laredo (Texas)
Port	41-13	Evansville (Indiana)
Port	41-15	Louisville (Kentucky)

	45	St. Louis (Missouri)
Port	52-02	Key West (Florida)
	53	Houston (Texas)

Code 6 Great Lakes Coastal District

07	Ogdensburg (New York)
09	Buffalo (New York)
34-23	Warroad (Minnesota)
34-24	Baudette (Minnesota)
36	Duluth (Minnesota)
37	Milwaukee (Wisconsin)
38	Detroit (Michigan)
39	Chicago (Illinois)
41	except 41-13 Evansville (Indiana) and 41-15 Louisville (Kentucky). Cleveland (Ohio)

U.S. West Coast

Code 5 North Pacific Coastal District

29	Portland (Oregon)
30	Seattle (Washington)
31	Anchorage (Alaska) (including Skagway)

Code 6 South Pacific Coastal District

25	San Diego (California)
27	Los Angeles (California)
28	San Francisco (California)
32	Honolulu (Hawaii)

* Classification D ports (four digits) apply to districts studied in part only.

** This district was excluded when necessary.

Source: U.S. Bureau of the Census, Department of Commerce, U.S. Foreign Trade Statistics Classifications and Cross-Classifications 1980, Washington (D.C.) 20233.

Appendix B

LIST OF CLASS E AND A COMMODITIES

Code	Description
00	Live animals
01	Meat and meat preparations
02	Milk products and eggs
03	Fish and fish preparations
04	Cereal and cereal preparations, flour, etc.
05	Fruit and vegetables
06	Sugar, sugar preparations and honey
07	Coffee, cocoa, tea and spices
08	Animal feed except unground cereals
09	Miscellaneous food preparations
11	Beverages
12	Tobacco and tobacco products
21	Leather, hides and crude pelts
22	Oil seed, oil fruit
23	Crude rubber, including synthetics and allied gums
24	Wood, wood fabricated material, cork
25	Pulp and paper waste
26	Crude textile fibres and fibre waste
27	Fertilizer and crude minerals except coal
28	Metallic minerals and scrap, n.e.s
29	Crude animal and vegetable materials
32	Coal, coke and briquettes
33	Petroleum and petroleum products
34	Natural gas and gas compounds
41	Animal oils and fats
42	Vegetable oils and fats
43 and 44**	Hydrogenized animal and vegetable oils and fats, n.e.s
51	Organic chemical products
52	Inorganic chemical products
53	Dyes, tanning and colouring products
54	Medicinal and pharmaceutical products
55	Scents, perfumes, soaps, etc.
56	Fertilizer and fertilizer products, n.e.s
57	Explosives and pyrotechnical products
58	Resin, rubber and synthetic plastic
59	Miscellaneous chemical products, n.e.s.
61	Leather, leather products and treated pelts
62	Tires and tire tubes
63	Fabricated wood and cork products (except furniture)

Code	Description
64	Paper or cardboard products
65	Thread, textile end products
66	Non-metallic mineral products
67	Iron and steel
68	Nonferrous metals
69	Metal fabricated products, n.e.s.
71	Energy producing machines and equipment
72	Special industry machinery
73	Metal working machinery
74	Industrial machinery and parts, n.e.s.
75	Office machines and data processors
76	Telecommunications and sound recording equipment
77	Electric machines and equipment
78	Road vehicles
79	Other transportation equipment
81	Heating, lighting and plumbing materials, n.e.s.
82	Furniture and accessories
83	Luggage, hand bags, etc.
84	Apparel and accessories
85	Footware
87	Occupational, scientific and controlling instruments
88	Photographic equipment, optical materials and clocks
89	Miscellaneous end products, n.e.s.
93	Uncategorized special transactions
94	Live animals (zoo animals, etc.)
95	Military material
96	Metal articles and coins not for legal tender***
97	Non-monetary gold, except minerals
99	General cargo valued under $500

Major Commodity Groups

Code	Description	Classification A & E
0	Food/Live Animals	00 - 09
1	Beverages and Tobacco	11 & 12
2	Inedible crude materials	21 - 29
3	Combustible minerals, lubricants and related products	32 - 34
4	Oil (fat)	41 - 44
5	Chemical and related products	51 - 59
6	Fabricated (semi-fabricated) products	61 - 69
7	Machinery and transportation equipment	71 - 79
8	Miscellaneous end products	81 - 89
9	Other/special transactions	93 - 99

Schedule E: SITC-Based Classification of Domestic and Foreign Commodities Exported from the United States.

Schedule A: SITC-Based Classification of Commodities Exported from the United States.

Source: U.S. Bureau of the Census, Department of Commerce, U.S. Foreign Trade Statistics Classifications and Cross-Classifications, 1980, Washington (D.C.).

** For the same products, No. 43 under Classification A and No. 44 under Classification E.

*** Code 96 does not appear in Classification A.

Appendix C

CUSTOMS DISTRICTS CLEARING AMERICAN OVERSEAS EXPORTS VIA CANADA

Eastern Districts

Code* (Classification D)	District
01	Portland (Maine)
02	St. Albans (Vermont)
07	Ogdensburg (New York)
09	Buffalo (New York)
10	New York City (New York)
35	Minneapolis (Minnesota)
36	Duluth (Minnesota)
37	Milwaukee (Wisconsin)
38	Detroit (Michigan)
39	Chicago (Illinois)
41	Cleveland (Ohio)

Western Districts

Code	District
30	Seattle (Washington)
33	Great Falls (Montana)
34	Pembina (North Dakota)

* Classification D: Classification of U.S. Customs Districts and Ports. (U.S. Foreign Trade Statistics. Classification and Cross-Classifications, U.S. Department of Commerce, Bureau of the Census, 1980, Washington).

Source: U.S. Bureau of the Census, Department of Commerce, U.S. Foreign Trade Statistics Classification and Cross-Classifications, 1980, Washington (D.C.).

Appendix D

CUSTOMS DISTRICTS CLEARING AMERICAN OVERSEAS IMPORTS VIA CANADA

Eastern Districts

Code* (Classification D)	District
01	Portland (Maine)
02	St. Albans (Vermont)
04	Boston (Massachusetts)
05	Providence (Rhode Island)
06	Bridgeport (Connecticut)
07	Ogdensburg (New York)
09	Buffalo (New York)
10	New York City (New York)
11	Philadelphia (Pennsylvania)
13	Baltimore (Maryland)
14	Norfolk (Virginia)
35	Minneapolis (Minnesota)
36	Duluth (Minnesota)
37	Milwaukee (Wisconsin)
38	Detroit (Michigan)
39	Chicago (Illinois)
41	Cleveland (Ohio)
54	Washington (D.C.)

Western Districts

Code	District
29	Portland (Oregon)
30	Seattle (Washington)
33	Great Falls (Montana)
34	Pembina (North Dakota)

U.S. Central Band Districts

Code	District
15	Wilmington (North Carolina)
16	Charleston (South Carolina)
25	San Diego (California)
27	Los Angeles (California)
28	San Francisco (California)
45	St. Louis (Missouri)

* Classification D: Classification of U.S. Customs Districts and Ports: U.S. Bureau of the Census, Department of Commerce, U.S. Foreign Trade Statistics. Classifications and Cross-Classifications, 1980, Washington (D.C.)

APPENDIX E

CLASSIFICATION OF COUNTRIES BY TRADE AREAS CLASSIFICATION C-E AND CLASSIFICATION C-1

Classification C-E (Countries of Destination)		Classification C-1 Countries of Origin
	Western Europe	
400	Iceland	400.0
401	Sweden	401.0
403	Norway	403.0
405	Finland	405.0
409	Denmark	409.0
412	United Kingdom	412.0
419	Ireland	419.0
421	Netherlands	421.0
423	Belgium and Luxembourg	423.0
427	France	427.0
428	Germany, West	428.0
433	Austria	433.0
441	Switzerland	441.0
467	Portugal	467.0
469	Spain	469.0
471	Portugal	471.0
472	Gibraltar	472.0
473	Malta	473.0
475	Italy	475.0
484	Greece	484.0
	Eastern Europe	
429	Germany, East	429.0
435	Czechoslovakia	435.0
437	Hungary	437.0
447	USSR	447.0
449	USSR	449.0
451	USSR	451.0
455	Poland	455.0
461	USSR	461.0
479	Yugoslavia	479.0
481	Albania	481.0
485	Romania	485.0
487	Bulgaria	487.0
	Middle East	
489	Turkey	489.0
491	Cyprus	491.0

502	Syria	502.0
504	Lebanon	504.0
505	Iraq	505.0
507	Iran	507.0
508	Israel	508.0
511	Jordan	511.0
512	Israel	512.0
513	Kuwait	513.0
517	Saudi Arabia	517.0
518	Qatar	518.0
520	Emirates, United Arab	520.0
521	Yemen, North	521.0
522	Yemen, South	522.0
523	Oman (Muscat)	523.0
525	Bahrain	525.0
725	Libya	725.0
729	Egyptian Arab Republic	729.0
732	Sudan	732.0
770	Somalia	770.0
774	Ethiopia	774.0

Africa

714	Morocco	714.0
721	Algeria	721.0
723	Tunisia	723.0
733	Spanish Africa	733.0
735	Spanish Africa	735.0
737	Spanish Africa	737.0
738	Spanish Africa	738.0
741	Mauritania	741.0
742	Cameron	742.0
744	Senegal	744.0
745	French Africa, n.e.s.	745.0
746	Guinea	746.0
747	Sierra Leone	747.0
748	Ivory Coast	748.0
749	Ghana	749.0
750	Gambia	750.0
751	Niger	751.0
752	Togo	752.0
753	Nigeria	753.0
754	Central African Republic	754.0
755	Gabon	755.0
756	French Africa, n.e.s.	756.0
758	Commonwealth Africa, n.e.s.	758.0
759	Portugese Africa, n.e.s.	759.0
760	French Africa, n.e.s.	760.0
761	Benin	761.0
762	Angola	762.0
763	French Africa, n.e.s.	763.0
764	Portugese Africa, n.e.s.	764.2 to 764.4

765	Liberia	765.0
766	Zaire	766.0
767	Zaire	767.0
769	Zaire	769.0
777	French Africa, n.e.s.	777.0
778	Uganda	778.0
779	Kenya	779.0
780	Commonwealth Africa, n.e.s.	780.0
783	Tanzania	783.0
785	Mauritius and dependencies	785.0
787	Mozambique	787.0
788	Madagascar	788.0
789	French Africa, n.e.s.	789.0
790	French Africa, n.e.s.	790.0
791	South Africa	791.0
792	South Africa	792.0
793	Commonwealth Africa, n.e.s.	793.0
794	Zambia	794.0
795	Commonwealth Africa, n.e.s.	795.0
796	Zimbabwe - Rhodesia	796.0
797	Malawi	797.0
799	Commonwealth Africa, n.e.s.	799.0

Asia

531	Afghanistan	531.0
533	India	533.0
535	Pakistan	535.0
536	India	536.0
538	Bangladesh	538.0
542	Sri Lanka	542.0
546	Burma	546.0
549	Thailand	549.0
552	Vietnam	552.0
553	Khmer Republic-Laos-Cambodia	553.0
555	Khmer Republic-Laos-Cambodia	555.0
557	Malaysia	557.0
559	Singapore	559.0
560	Indonesia	560.0
561	Brunei	561.0
565	Philippines	565.0
566	Portugese-Asia	566.0
568	India	568.2 and 568.3
570	People's Republic of China	570.0
574	People's Republic of China	574.0
579	Korea, North	579.0
580	Korea, South	580.0
582	Hong Kong	582.0
583	Taiwan	583.0
588	Japan	588.0
781	India	781.0

Oceania

602	Australia	602.1 to 602.4 and 602.9
604	Papua New Guinea	604.0
614	New Zealand	614.1 to 614.4
615	British Oceania, n.e.s.	615.0
622	British Oceania, n.e.s.	622.3 to 622.7
641	French Oceania	641.2 to 641.4
684	United States Oceania	684.0
686	Fiji	686.2 to 686.4
931	United States-Oceania	931.0
933	United States-Oceania	933.0
935	United States-Oceania	935.0
941	United States-Oceania	941.0
951	United States-Oceania	951.0

South America

301	Colombia	301.0
307	Venezuela	307.0
312	Guyana	312.0
315	Suriname	315.0
317	French Guiana	317.0
331	Ecuador	331.0
333	Peru	333.0
335	Bolivia	335.0
337	Chile	337.0
351	Brazil	351.0
353	Paraguay	353.0
355	Uruguay	355.0
357	Argentina	357.0
372	Falkland Islands	372.0

Central America and Caribbean

201	Mexico	201.0
205	Guatemala	205.0
208	Belize	208.0
211	El Salvador	211.0
215	Honduras	215.0
219	Nicaragua	219.0
223	Costa Rica	223.0
225	Panama	225.0
232	Bermuda	232.0
236	Bahamas	236.0
239	Cuba	239.0
241	Jamaica	241.0
243	Turks and Caicos Islands	243.0

244	Jamaica	244.0
245	Haiti	245.0
247	Dominican Republic	247.0
248	Leeward and Windward Islands	248.2 to 248.9
272	Barbados	272.0
274	Trinidad and Tobago	274.0
277	Netherlands, Antilles	277.0
283	French West Indies	283.0
903	Puerto Rico	903.0
911	United States Virgin Islands	911.0

North America

100	United States of America	100.0
101	Greenland	101.0
122	Canada	122.0
161	Saint-Pierre-et-Miquelon	161.0

APPENDIX F

COMPARISON OF CANADIAN AND AMERICAN STATISTICS ON DIVERTED CANADIAN EXPORT TRADE

This Appendix assesses the degree of compatibility between Canadian and American statistical data on diverted Canadian export trade. This procedure enables us to compare the diversion phenomenon from two distinct statistical sources and to identify the major reasons for any discrepancies. All data presented in this Appendix are expressed in U.S. dollars.

Table F.1 shows one comparison of the two statistical sources. The similarity of Canadian and American findings established on the basis of major trade areas shows that both statistical sources, apart from slight variations, are comparable except for Eastern Europe and Asia. The first section identifies the fundamental differences in methodologies used to compile Canadian or American data. The second section compares the findings of the two different sources for the principal countries in each major trade area.

F.1 Data Selection

The approach used to evaluate Canadian export traffic flows routed via the United States differs for each of the two statistical sources. Canadian foreign trade statistics require a deductive approach. Because overseas routing is necessarily by sea or air, products transported across the border by rail or road must subsequently have been shipped overseas from an American loading point. Data on Canadian traffic shipped by rail or road thus determine the scope of Canadian export products diverted via the United States.

The evaluation of Canadian traffic diverted via the United States using American data is more direct. American statistics explicitly identify foreign commodities loaded in American ports and, in particular, traffic originating in Canada.

Divergency Factors

One possible explanation for variations in the evaluation of diversion between the two statistical sources is the fact that American data relate strictly to overseas ocean traffic, whereas Canadian data cover all overseas routings (sea and air) from the United States. It is impossible to determine, from Canadian data, the portion of seaborne, as opposed to airborne, traffic diverted via the United States.

A second possible explanation for variations is that different definitions for "country of destination" and different

verification and control methods are used. It should be noted that both statistical sources use the same definition of country of destination i.e., the country to which commodities are consigned upon departure, or the remotest known destination. However, the term "remotest known destination" may, in some instances, be a transhipment point in another country and not the final destination. Because Canadian authorities have access to the original customs export declaration form, it is reasonable to assume that Canadian data more adequately document the final destination of our trade than do American data, especially when diverted trade is presented by country.

A third possible factor explaining differences in the two statistical sources concerns the evaluation itself of each trade transaction. As explained in Chapter 3, original American data were assessed using "Free alongside ship" (FAS) values as opposed to "Free on board" (FOB) values used in Canadian data. Generally speaking, the FAS value of a transaction is greater than its FOB value.

Lastly, a number of other factors may also explain the differences. For example, there may have been errors in transcribing and processing original data, differences resulting from conversion into standard monetary values or failure by the shipper (or his representative) to indicate, when declaring Canadian products loaded in American ports, whether U.S. or Canadian dollars were used.

F.2 Comparison of Canadian and American Data by Country

The purpose of this section is to determine whether particular discrepancies are characteristic of certain trade areas and, if so, why.

Western and Eastern Europe

Except for the Netherlands, American statistics show a lower assessment of Canadian export traffic via the United States destined for Western Europe. American data concerning Western European countries seem to be distorted by the international overseas traffic transhipment phenomenon and because ports in the Netherlands (Rotterdam, for instance) are major European ports of entry. Moreover, a portion of the $64 million excess found in Canadian data may be Canadian overseas traffic shipped via an American airport. Of all Canadian exports to Western Europe, almost 12% were shipped from Canada by air in 1982.

Lastly, the comparison of American and Canadian data for traffic destined for Eastern Europe strongly suggests that American data are an inadequate measure of diversion to this group of countries. The prime reason for this stems from the clearance of traffic diverted to American shipment ports. Canadian products destined for Eastern Europe are not declared as

such before being transported to other countries (possibly in Europe) and from there, re-shipped to their final Eastern European destination. Unaware of the ultimate destination of products, American ports shipping these products consider the transhipment country as the remotest known destination at the time of loading.

The $64 million dollar excess may also include a large portion of the value of Canadian traffic destined for Eastern Europe but routed via Western European ports (i.e., via Northern or Mediterranean ports). This is a very strong possibility given the international nature of ocean transport and, more specifically for traffic destined for Eastern Europe, given the 1980 American embargo on vessels flying the Soviet flag.

Middle East Countries

American statistics on Canadian export trade destined for Middle East countries underestimate the scope of diversion, mainly with respect to motor vehicles. The difference of $274 million in total traffic is reduced to $11 million if motor vehicles are excluded. More specifically, the value of motor vehicles routed via the United States is $278.4 million according to Canadian statistics compared to $15.3 million according to American statistics.

It thus appears that the overall difference in Canadian and American data can be explained by the fact that different definitions are used for Canadian motor vehicle exports via the United States, given the particular nature of the industry.

African Countries

Both statistical sources show very similar findings for African countries, in terms of both overall figures and those relating to a specific country. However, American data are distorted by the difficulty in precisely identifying the country of destination. For Nigeria in particular, it appears that a portion of the trade attributed to this country corresponds to ocean transhipments destined for other African countries.

South American Countries

A comparison of Canadian and American data for traffic destined for South American countries bears witness to the overall accuracy of both sources for measuring the diversion phenomenon. Nonetheless, by considering the difference between Canadian and American data, it would appear that Ecuador and Venezuela are relatively significant countries of ocean transhipment for the South American continent.

Central American and Caribbean Countries

When comparing Canadian and American data, statistics on traffic destined for Mexico and Puerto Rico should be omitted. Canadian data on Mexico are not detailed enough to differentiate between routings transited across American territory and those which actually represent ocean diversion (or air diversion) via an American port. Data on Puerto Rico have also been excluded because it is an American state and not a sovereign country.

Thus, for the entire area described, both statistical sources show similar findings. However, detailed examination shows that significant differences are to be found for the Dominican Republic (American data greatly exceeding Canadian data), Jamaica and the Leeward Islands (for which American data are distinctly lower than Canadian data).

Asian Countries

American data exceed Canadian data by almost $350 million in their assessment of Canadian export traffic destined for Asian countries and routed via the United States; the overall difference is 46.5%. On a country by country basis, Canadian and American data are similar only with respect to Singapore and Malaysia. For all other countries, American data are much higher than Canadian data except for the People's Republic of China. It seems highly likely that Canadian exports to China were registered in terms of remotest known overseas destination at the time of loading in American ports; this destination would correspond to the country of ocean transhipment, probably South Korea and Hong Kong.

No precise explanation could be found for the difference in findings relevant to the major Asian countries. However, this divergency mainly relates to commodity flows shipped via the Pacific, as suggested by the East-West distribution of diverted traffic via the United States and destined for Japan, South Korea, Taiwan and Hong Kong.

This finding led us to question whether American data included overseas traffic routed via an American port by feeder services between certain Canadian and American overseas loading ports. Investigation led to the elimination of this hypothesis. Provision of this type of service within the context of Canadian overseas trade is only marginal. Among the overland modes of transportation for diverted Canadian traffic via the U.S., the most common is truck, followed by rail.

Oceania

Canadian and American data produced comparable findings for the countries of Oceania. However, the American assessment is higher than that found in Canadian statistics for each of the countries. No particular reason for this situation could be determined.

Table F-1

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVERSION
MAJOR TRADE AREAS
1982

(in millions of Canadian Dollars)

Trade Areas	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Western Europe	347.0	282.6	64.4
Eastern Europe	4.3	0.6	3.7
Middle East*	250.6	239.3	11.3
Africa	63.0	65.3	(2.3)
Asia	737.8	1 096.4	(358.6)
Oceania	91.3	105.6	(14.3)
South America	239.4	240.0	(0.6)
Central America and Caribbean**	214.1	216.9	(2.8)

* Motor vehicle data have been omitted.
** Data for Mexico and Puerto Rico have not been considered.

This Appendix contains explanations of the special treatment accorded both of the above-asterixed items.

Table F-2

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT TRADE DIVERSION
WESTERN EUROPEAN COUNTRIES
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
United Kingdom	103.7	76.8	26.9
Netherlands	50.7	112.9	(62.2)
Belgium	30.9	9.6	21.3
West Germany	27.7	15.4	12.3
France	26.4	25.5	0.9
Italy	26.3	5.7	20.6
Sweden	17.7	4.5	13.2
Norway	11.9	5.6	6.3
Switzerland	11.0	3.6	7.4
Other Countries	40.7	23.0	17.7
Total	347.0	282.6	64.4

Note: Overall difference of 18.6% between the Canadian and American data.

Table F-3

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVERSION
EASTERN EUROPEAN COUNTRIES
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Czechoslovakia	1.292	0.032	1.260
Yugoslavia	1.134	0.497	0.637
USSR	0.867	0.054	0.813
Poland	0.509	-	0.509
Other Countries	0.523	0.045	0.478
Total	4.325	0.623	3.697

Table F-4

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVERSION
MIDDLE EAST COUNTRIES
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Saudi Arabia	291.9	118.0	173.9
Kuwait	69.5	20.9	48.6
Iraq	39.5	22.0	17.3
Libya	25.0	27.9	(2.9)
Iran	14.7	3.2	11.5
Other Countries	88.4	62.6	25.8
Total:			
(1) Less Vehicles	250.6	239.3	11.3
(2) Vehicles only	278.4	15.3	263.1
(3) All commodities	529.0	254.6	274.4

Note: Overall difference of 4.5% between Canadian and American data, once motor vehicles are excluded.

Table F-5

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVISION
AFRICAN COUNTRIES
1982

(in millions of Canadian dollars)

Country of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
South Africa	22.3	21.9	0.4
Nigeria	13.5	16.1	(2.6)
Algeria	9.4	7.7	1.7
Morocco	3.4	3.0	0.4
Zaïre	2.3	3.3	(1.0)
Ghana	1.8	2.2	(0.4)
Tunisia	1.0	1.8	(0.8)
Other Countries	9.3	9.3	-
Total	63.0	65.3	(2.3)

Note: Overall difference of 3.6% between Canadian and American data.

Table F-6

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVERSION
SOUTH AMERICAN COUNTRIES
1982

(in millions of Canadian dollars)

Country of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Argentina	18.9	14.4	4.5
Bolivia	1.2	0.7	0.5
Brazil	28.6	23.1	5.5
Chile	9.2	4.6	4.6
Colombia	22.8	13.4	9.4
Ecuador	16.2	26.3	(10.1)
Guyana	3.9	3.2	0.7
Paraguay	0.3	0.2	0.1
Peru	21.7	19.3	2.4
Surinam	3.5	3.8	(0.3)
Uruguay	0.9	0.6	0.3
Venezuela	111.9	130.1	(18.2)
Total	239.3	239.9	(0.6)

Note: Overall difference of 0.3% between Canadian and American data.

Table F-7

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT TRADE DIVERSION
CENTRAL AMERICAN AND CARIBBEAN COUNTRIES
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Trinidad and Tobago	60.4	55.6	4.8
Bermuda	23,3	21.8	1.5
Dominican Republic	20.4	29.1	(8.7)
Bahamas	20.7	23.8	(3.1)
Panama	13.1	13.1	-
Barbados	11.3	11.2	0.1
Jamaica	15.1	1.9	13.2
Leeward Isl.	9.8	4.6	5.2
Guatemala	7.2	8.0	(0.8)
Haiti	5.2	3.8	1.4
Honduras	5.9	5.3	0.6
Costa Rica	3.4	4.9	(1.5)
Nicaragua	2.4	2.5	(0.1)
Other Countries	15.9	31.3	(15.4)
Total*	214.1	216.9	(2.8)

* Mexico and Puerto Rico excluded.

Overall difference of 1.3% between Canadian and American data.

Table F-8

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT
TRADE DIVERSION
ASIAN COUNTRIES
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Japan	330.8	433.3	(102.5)
South Korea	113.0	207.7	(94.7)
Singapore	42.6	47.4	(4.8)
Hong Kong	41.9	64.1	(22.2)
Indonesia	37.5	69.4	(31.9)
Taiwan	35.6	101.3	(65.7)
Malaysia	30.7	35.0	(4.3)
Thailand	28.0	61.0	(33.0)
People's Rep. of China	24.3	1.8	22.5
Other Countries	26.5	27.9	(1.4)
Total	737.8	1 096.4	(349.6)
East-West Distribution for Certain Countries:			
Japan via			
East Coast United States	168.0	154.2	13.8
West Coast United States	162.8	279.1	(116.3)
South Korea via			
East Coast United States	43.3	15.0	28.3
West Coast United States	70.0	192.4	(122.4)
Taiwan via			
East Coast United States	16.5	21.7	(5.2)
West Coast United States	19.2	79.7	(60.5)
Hong Kong via			
East Coast United States	31.1	29.8	1.3
West Coast United States	10.8	34.3	(23.5)

Table F-9

COMPARATIVE STATISTICAL DATA ON CANADIAN EXPORT TRADE DIVERSION
OCEANIA
1982

(in millions of Canadian dollars)

Countries of Destination	Canadian Data (1)	American Data (2)	Difference (1) - (2) (3)
Australia	71.8	80.1	(8.3)
New Zealand	14.2	18.5	(4.3)
Fr. Oceania	0.6	1.6	(1.0)
Papua, New Guinea	0.8	0.9	(0.1)
Other Countries	3.9	4.5	(0.6)
Total	91.3	105.6	(14.3)

Note: Overall difference of 15.6% between Canadian and American data.

Appendix G

DETAILED TABLES OF DIVERTED TRAFFIC COMMODITIES BY TRADE AREA OF DESTINATION AND ORIGIN

Table G-1

MAJOR CANADIAN OVERSEAS EXPORTS
SHIPPED VIA THE U.S. TO ASIA
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via the U.S. - All Destinations	Percentage of Exports to Asia Shipped Via the U.S.
01	Meat and meat preparations	166 155	88.15	18.70
21	Leather, hides and crude pelts	79 545	100.00	8.95
28	Metallic minerals and scrap, n.e.s.	64 857	89.20	7.30
26	Crude textile fibres and fibre waste	59 307	91.56	6.68
58	Resin, rubber and synthetic plastic	47 385	73.89	5.33
76	Telecommunications and sound recording equipment	46 621	76.48	5.25
03	Fish and fish preparations	46 440	61.42	5.23
25	Pulp and paper waste	41 716	98.21	4.70
68	Nonferrous metals	36 652	26.86	4.13
72	Special industry machinery	24 987	22.32	2.81
74	Industrial machinery and parts, n.e.s.	21 636	32.54	2.44
69	Metal fabricated products, n.e.s.	17 595	24.59	1.98
04	Cereal and cereal preparations, flour, etc.	17 372	54.10	1.96
05	Fruit and vegetables	17 269	54.81	1.94
52	Inorganic chemical products	15 760	69.77	1.77
78	Road vehicles	15 254	11.71	1.72
	Other	169 881	31.46	19.12
	TOTAL	888 392	49.59	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-2

MAJOR CANADIAN OVERSEAS EXPORTS
SHIPPED VIA THE U.S. TO WESTERN EUROPE
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via the U.S. - All Destinations	Percentage of Exports to Asia Shipped Via the U.S.
68	Nonferrous metals	72 405	53.05	31.62
03	Fish and fish preparations	24 191	32.00	10.57
73	Metal working machinery	19 938	86.90	8.71
01	Meat and meat preparations	14 024	7.44	6.13
59	Miscellaneous chemical products, n.e.s.	12 237	28.05	5.34
72	Special industry machinery	10 963	9.79	4.79
69	Metal fabricated products, n.e.s.	10 015	13.99	4.37
28	Metallic minerals and scrap, n.e.s.	6 936	9.54	3.03
51	Organic chemical products	5 038	48.89	2.20
78	Road vehicles	4 881	3.75	2.13
27	Fertilizer and crude minerals except coal	4 640	34.86	2.03
	Other	43 690	4.78	19.08
	TOTAL	228 958	12.78	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-3

MAJOR CANADIAN OVERSEAS EXPORTS
SHIPPED VIA THE U.S. TO THE MIDDLE EAST
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via the U.S. - All Destinations	Percentage of Exports to the Middle East and Shipped Via the U.S.
77	Electric machines and equipment	27 270	48.67	13.22
69	Metal fabricated products, n.e.s.	25 220	35.24	12.23
72	Special industry machinery	24 046	21.48	11.66
71	Energy producing machines and equipment	20 535	54.06	9.96
74	Industrial machinery and parts, n.e.s.	16 676	25.08	8.09
78	Road vehicles	12 361	9.49	5.99
59	Miscellaneous chemical products, n.e.s.	10 898	24.98	5.28
68	Nonferrous metals	9 754	7.15	4.73
82	Furniture and accessories	8 343	49.53	4.05
66	Non metallic mineral products	5 876	25.70	2.85
65	Thread, textile end products	4 796	11.30	2.33
	Other	40 463	3.84	19.61
	TOTAL	206 238	11.51	110.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-4

MAJOR CANADIAN OVERSEAS EXPORTS SHIPPED TO SOUTH AMERICA AND CENTRAL AMERICA/CARIBBEAN
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via the U.S. All Destinations	Percentage of Exports to South America and Central America/Caribbean Shipped Via the U.S.
78	Road vehicles	66 238	50.86	20.16
72	Special industry machinery	34 093	30.46	10.38
74	Industrial machinery and parts, n.e.s.	15 821	23.80	4.81
59	Miscellaneous chemical products, n.e.s.	14 472	33.18	4.40
68	Nonferrous metals	14 268	10.45	4.34
67	Iron and steel	13 779	40.51	4.19
69	Metal fabricated products, n.e.s.	13 447	18.79	4.09
04	Cereal and cereal preparations, flour, etc.	12 273	38.22	3.74
65	Thread, textile end products	10 813	25.49	3.29
64	Paper or cardboard products	10 680	36.87	3.25
58	Resin, rubber and synthetic plastic	10 238	15.96	3.12
76	Telecommunications and sound recording equipment	9 758	16.00	2.97
77	Electric machines and equipment	8 616	15.38	2.62
05	Fruit and vegetables	7 662	24.32	2.33
02	Milk products and eggs	7 084	47.68	2.16
01	Meat and meat preparations	7 007	3.72	2.13
89	Miscellaneous end products, n.e.s.	6 926	23.59	2.11
	Other	65 417	10.09	19.91
	TOTAL	328 582	18.34	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-5

MAJOR CANADIAN OVERSEAS IMPORTS VIA THE U.S.
ORIGINATING IN ASIA
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Imported Via the U.S. - All Destinations	Percentage of Imports from Asia Shipped Via the U.S.
89	Miscellaneous end products, n.e.s	504 352	95.48	15.03
78	Road Vehicles	339 363	95.24	10.12
84	Apparel and accessories	296 115	99.84	8.83
05	Fruit and vegetables	270 010	71.64	8.05
69	Metal fabricated products, n.e.s.	244 506	96.28	7.29
65	Thread, textile end products	193 735	98.00	5.77
76	Telecommunications and sound recording equipment	189 299	99.84	5.64
66	Non metallic mineral products	168 711	90.51	5.03
62	Tires and tire tubes	102 875	98.73	3.07
77	Electric machines and equipment	93 460	95.21	2.79
85	Footware	89 444	95.62	2.67
72	Special industry machinery	84 738	92.16	2.53
67	Iron and steel	69 612	77.84	2.07
09	Miscellaneous food preparations	68 456	93.36	2.04
	Other	640 220	24.54	19.08
	TOTAL	3 354 821	60.50	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-6

MAJOR CANADIAN OVERSEAS IMPORTS VIA THE U.S.
ORIGINATING IN WESTERN EUROPE
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Imported Via the U.S. - All Destinations	Percentage of Imports from Western Europe Shipped Via the U.S.
11	Beverages	202 827	91.78	48.68
33	Petroleum and petroleum products	85 282	6.56	20.47
05	Fruit and vegetables	59 309	15.74	14.23
89	Miscellaneous end products, n.e.s.	22 152	4.19	5.32
66	Non metallic mineral products	17 216	9.24	4.13
78	Road vehicles	16 684	4.68	4.00
	Other	13 217	3.82	3.17
	TOTAL	416 687	9.05	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-7

MAJOR U.S. OVERSEAS EXPORTS SHIPPED TO
WESTERN EUROPE VIA CANADA
1982
(in thousands of dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via Canada All Destinations	Percentage of Exports to Western Europe and Shipped Via Canada
78	Road vehicles	164 633	74.82	10.52
89	Miscellaneous end products, n.e.s.	128 593	93.45	8.22
72	Special industry machinery	111 446	47.57	7.12
74	Industrial machinery and parts, n.e.s.	109 359	76.47	6.99
71	Energy producing machines and equipment	90 951	85.74	5.81
77	Electric machines and equipment	77 659	81.15	4.96
21	Leather, hides and crude pelts	68 662	78.60	4.39
28	Metallic minerals and scrap, n.e.s.	67 210	96.72	4.30
69	Metal fabricated products, n.e.s.	53 661	84.61	3.43
05	Fruit and vegetables	52 023	93.73	3.33
88	Photographic equipment, optical materials and clocks	50 890	90.69	3.25
58	Resin, rubber and synthetic plastic	42 026	97.60	2.69
87	Occupational, scientific and controlling instruments	41 249	89.41	2.64
59	Miscellaneous chemical products, n.e.s.	39 155	90.04	2.50
51	Organic chemical products	37 518	96.97	2.40
09	Miscellaneous food preparations	33 595	97.08	2.15
73	Metal working machines	29 759	81.03	1.90
75	Office machines and data processors	29 167	93.97	1.86
64	Paper or cardboard products	27 079	81.66	1.73
54	Medicinal and pharmaceutical products	26 614	89.73	1.70
24	Wood, wood fabricated products and cork	22 759	83.09	1.45
	Other	260 461		16.66
	TOTAL	1 564 469		100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-8

MAJOR U.S. OVERSEAS EXPORTS SHIPPED TO
EASTERN EUROPE VIA CANADA
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Exported Via Canada - All Destinations	Percentage of Exports to Eastern Europe Shipped Via Canada
72	Special industry machinery	109 421	46.71	42.03
78	Road vehicles	53 015	24.09	20.36
74	Industrial machinery and parts, n.e.s	23 060	16.13	8.86
21	Leather, hides and crude pelts	16 682	19.10	6.41
71	Energy producing machines and equipment	12 653	11.93	4.86
69	Metal fabricated products, n.e.s.	6 560	10.34	2.52
	Other	38 952		14.96
	TOTAL	260 343		100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-9

MAJOR U.S. OVERSEAS IMPORTS VIA CANADA
ORIGINATING IN WESTERN EUROPE
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Imported Via Canada - All Destinations	Percentage Imports from Western Europe Transited Through Canada
78	Road Vehicles	208 815	94.19	12.20
71	Energy producing machines and equipment	167 391	93.50	9.78
11	Beverages	130 130	92.85	7.61
89	Miscellaneous end products, n.e.s.	117 122	82.04	6.85
51	Organic chemical products	110 267	97.68	6.44
74	Industrial machinery and parts, n.e.s.	107 675	90.13	6.29
67	Iron and steel	103 411	70.33	6.04
72	Special industry machinery	99 919	94.91	5.84
69	Metal fabricated products, n.e.s.	76 846	81.76	4.49
68	Nonferrous metals	66 812	84.41	3.90
59	Miscellaneous chemical products, n.e.s.	59 430	96.23	3.47
73	Metal working machines	41 223	89.15	2.41
66	Non metallic mineral products	40 749	84.79	2.38
52	Inorganic chemical products	35 615	97.68	2.08
75	Office machines and data processors	33 345	80.74	1.95
77	Electric machines and equipment	29 572	76.25	1.73
88	Photographic equipment, optical material and clocks	27 674	79.05	1.62
79	Transport equipment	22 150	92.62	1.29
	Other	232 867		13.63
	TOTAL	1 711 013	80.78	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table G-10

MAJOR U.S. OVERSEAS IMPORTS VIA CANADA
ORIGINATING IN ASIAN COUNTRIES
1982
(in thousands of U.S. dollars)

Code	Description of Commodities	Value	Percentage of These Commodities Imported Via Canada - All Destinations	Percentage of Imports from Asian Countries Transited Through Canada
67	Iron and Steel	32 955	22.41	15.43
84	Apparel and accessories	20 204	74.65	9.46
76	Telecommunications and sound recording equipment	18 891	67.03	8.85
89	Miscellaneous end products, n.e.s.	17 797	12.47	8.33
69	Metal fabricated products, n.e.s.	14 513	15.44	6.80
78	Road vehicles	11 617	5.24	5.44
71	Energy producing machines and equipment	9 519	5.32	4.46
77	Electric machines and equipment	8 356	21.55	3.91
75	Office machines and data processors	7 681	18.60	3.60
88	Photographic equipment, optical material and clocks	7 065	20.18	3.31
66	Non metallic mineral products	5 942	12.36	2.78
74	Industrial machinery and parts, n.e.s.	5 375	4.50	2.52
72	Special industry machinery	4 068	3.86	1.90
06	Sugar, sugar preparations and honey	3 535	22.01	1.66
68	Nonferrous metals	3 029	3.83	1.42
73	Metal-working machinery	2 877	6.22	1.35
	Other	40 135		18.79
	TOTAL	213 562	10.08	100.00

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Appendix H

CANADIAN OVERSEAS TRAFFIC VIA THE UNITED STATES 1978-1982

Table H-1

CANADIAN OVERSEAS EXPORT TRADE ROUTED VIA AMERICAN PORTS
REGIONS OF DESTINATION
1978-1982

(in millions of constant 1978 Canadian dollars)

Geographic Region of Destination	1978	1979	1980	1981	1982
Caribbean Sea	238.9	206.1	168.4	194.9	197.4
South America, East Coast	40.7	50.0	68.8	33.0	25.6
South America, West Coast	23.9	28.2	33.8	49.1	37.0
Central America, West Coast	3.2	3.6	13.9	10.2	6.2
Gulf of Mexico	4.9	1.1	6.3	15.0	2.4
United Kingdom and Northern Ireland	54.6	56.4	39.5	48.7	41.6
Baltic Sea	14.9	13.1	9.5	11.3	9.3
Netherlands, Belgium	26.7	42.1	70.0	43.4	97.5
France, North and West Coasts	10.7	13.3	15.9	15.3	14.8
West Germany, North Coast	23.7	32.9	34.6	23.5	11.5
Spain, North Coast	1.1	0.9	1.1	0.3	0.8
Spain, South Coast	0.5	1.1	1.6	0.7	1.0
Portugal	1.2	0.7	1.0	1.1	0.1
Mediterranean and Black Sea	23.0	38.7	57.7	61.0	50.8
Morocco	0.3	0.5	0.3	1.4	1.9
Canary Islands	13.4	4.5	11.0	18.7	18.7
Africa, East and South	9.8	4.9	10.0	26.3	16.0
Australia, Northern New Zealand	51.2	46.3	33.6	60.1	66.8
Other Pacific Islands	NS	NS	NS	NS	NS
Persian Gulf, Red Sea	92.5	83.8	75.5	134.3	141.0
Malaysia, Indonesia	29.7	20.4	29.0	93.5	98.3
Far East (South)	104.8	93.9	87.4	154.8	191.3
Far East (North)	251.8	198.5	277.3	389.4	434.8
TOTAL	1 021.5	941.0	1 046.2	1 386.0	1 464.8

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.

Table H-2

CANADIAN OVERSEAS IMPORT TRADE ROUTED VIA AMERICAN PORTS
REGIONS OF ORIGIN
1978-1982

(in millions of constant 1978 Canadian dollars)

Geographic region of origin	1978	1979	1980	1981	1982
Caribbean Sea	66.6	31.1	73.1	31.8	50.8
South America, East Coast	15.6	38.9	34.8	108.5	16.3
South America, West Coast	5.1	7.6	33.5	50.7	49.1
Central America, West Coast	6.6	0.7	3.4	18.2	14.2
Gulf of Mexico	0.4	0.1	NS	NS	0.1
United Kingdom a.n.d Northern Ireland	24.4	55.6	51.1	58.4	37.5
Baltic Sea	24.8	16.9	16.5	23.7	14.5
Netherlands, Belgium	50.9	49.4	44.6	47.1	37.1
France, North and West Coasts	38.1	49.4	46.2	106.0	72.8
West Germany, North Coast	37.3	57.0	61.3	86.7	70.3
Spain, North Coast	4.4	3.1	1.0	3.8	7.1
Spain, South Coast	12.5	12.1	7.3	9.3	17.1
Portugal	1.4	1.0	1.3	0.5	0.7
Mediterranean and Black Sea	35.2	69.7	127.5	87.2	84.9
Morocco	0.0	0.0	0.0	0.0	0.2
Canary Islands	3.6	4.4	2.9	4.9	3.8
Africa, East and South	0.5	0.3	5.1	130.0	224.7
Australia, Northern New Zealand	22.3	29.4	3.4	5.8	22.7
Persian Gulf, Red Sea	3.0	3.3	1.0	7.7	1.9
Malaysia, Indonesia	19.2	51.3	24.6	95.7	87.0
Far East (South)	621.0	1 153.1	1 225.1	227.6	863.1
Far East (North)	880.9	1 693.7	2 077.1	2 463.0	1 782.9
TOTAL	1 873.8	3 328.1	3 840.8	4 566.6	3 458.8

Note: NS = not significant.

Source: Canadian Transport Commission, Research Branch, Transport Industries Analysis, based on the U.S. Bureau of the Census data.